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Manual on Contracting for Vehicle Maintenance Services

October, 1992

Office of Technical Assistance and Safety

Manual on Contracting for Vehicle Maintenance Services

Final Report
October, 1992

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16 Abstract

The purpose of this manual is to guide transit agencies in the development of contracting documents and contracting relationships. Although the manual focuses on rural, small urban, and specialized transit operations, it contains useful information for all public agencies intending to purchase vehicle maintenance services through competitively awarded contracts. The manual is intended to be used for self study or to provide background material for workshop style training. Classroom exercises are included for this purpose.

To emphasize important and/or complex concepts, the manual contains numerous brief case studies. They are presented in Gray Boxes throughout the text and illustrate concepts being explained in the text.

The manual contains five chapters, four devoted to contract concepts - guidelines for contracting, competitive bidding, competitive negotiation, and contract controlling. One chapter focuses on the relationship between the agency and the contractor when the agency requires the contractor to test its employees for drugs and alcohol. The manual also contains three appendices, including statues governing contracting, case studies, and samples of the "state-of-the-practice" of maintenance contracting throughout the country, and special handling considerations when maintaining alternative fueled vehicles.

It has been found when a transit agency purchases vehicle maintenance services using third party providers, the use of competitive bidding/negotiation (as opposed to the use of small purchase agreements) almost always reduces the cost of vehicle maintenance and improves the quality of maintenance services. Drug and alcohol testing requirements and/or the introduction of unconventional alternatively fueled vehicles will necessitate making relationships with contractors more formal and increase the need for competitively awarded contracts.

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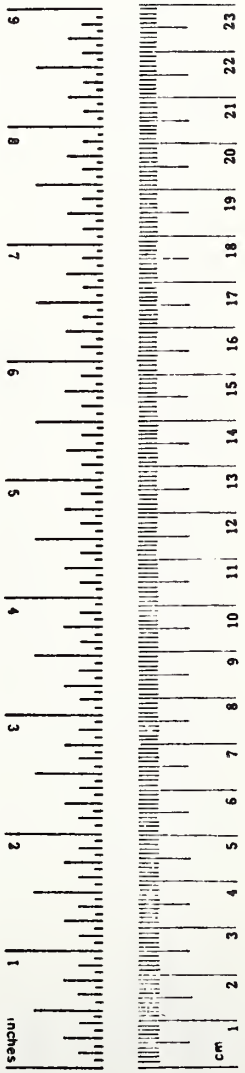
METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
	LENGTH			
in	inches	*2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
	AREA			
in^2	squers inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	squars yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	ecres	0.4	hectares	he
	MASS (weight)			
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
	VOLUME			
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	querts	0.95	liters	l
gal	gallons	3.8	liters	l
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
	TEMPERATURE (exact)			
°F	Fahrenheit temperature	5 9 (after subtracting 32)	Celsius temperature	°C

*1 in = 2.54 (exactly). For other exact conversions and more detailed tables, see NBS Misc. Publ. 286, Units of Weights and Measures, Price $2.25, SD Catalog No. C13.10:286.



Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
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mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
	AREA			
cm^2	squere centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10,000 m^2)	2.5	acres	
	MASS (weight)			
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
	VOLUME			
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m^3	cubic meters	35	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
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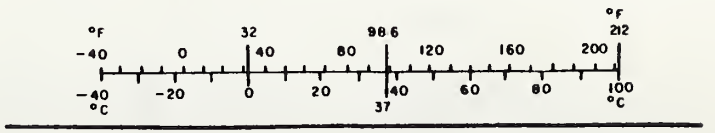
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F



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PREFACE

This manual has been written primarily to assist transit agency managers and supervisors who are considering the procurement of vehicle maintenance services from private, independent contractors. The tone of the manual focuses on rural and small urban transit agencies. However, the principals are still valid regardless of the size of the transit agency and they are applicable to other, non-transit, public agencies. It should provide these persons with assistance in developing mechanisms for monitoring vehicle maintenance services. Included in the manual are a review of the rationale, process, and methods that can be used in service maintenance contracting. Transit agencies receiving funds from the federal government are expected to be aware of the federal rules and regulations that constrain and define the procedures used to maintain a high level of effective and efficient service and to provide both passengers and the public with a safe means of transportation. This involves knowing the federal rules on drug testing, competitive bidding, disadvantaged business enterprises, as well as the general rules of contracting.

The manual will be divided into the following chapters:

Chapter One:	Guidelines for Contracting
Chapter Two:	Competitive Bidding, Invitations for Bids: Requirements and Pitfalls
Chapter Three:	Competitive Negotiations, Request for Proposals: Requirements and Pitfalls
Chapter Four:	Drug Testing: General Issues for Consideration in the Mass Transit Industry
Chapter Five:	Contract Controlling Guidelines
Appendix A:	State Statutes Governing Contracting in the Fifty States
Appendix B:	Sample Contracts From Transit Agencies Around the Country
Appendix C:	Handling Properties and Workplace Hazards of Popular Alternative Fuels

The manual is intended to be used by managers with all levels of knowledge of contracting. To make sure that all aspects of contracting are covered for the contracting novice, the manual covers all subjects in detail. For example, the last two section of Chapter 1 cover Federal Transit Administration guidelines for contracting. Managers experienced in contracting may wish to review this materials in less detail.

The manual is intended to accompany workshop style training. To facilitate the training, group exercises are included throughout the manual. As an illustration, at the end of Chapter 3 (the chapter covers requests for proposals) is a role playing exercise where one student is asked to be a contract negotiator for a transit agency and the other is a negotiator for a vehicle maintenance contractor. The two students are each given an information sheet written from either the agency's or the contractor's point-of-view, and they are then to negotiate terms of a contract.

The manual also contains brief case studies that are encapsulated in **Gray Boxes**. The case studies are realistic examples of concepts being explained in the text. The case study examples are taken from the authors' experiences. Often the case study is taken from an actual occurrence described to the authors during their research on the state-of-the-practice of maintenance contracting in the transit industry.

The authors believe the manual is particularly timely due to the recent approval of drug and alcohol testing requirements for transit workers in safety sensitive positions. Because the requirement is likely to be passed through to third party transit vehicle maintenance workers, transit agencies that utilize private services for vehicle maintenance will be required to have a formal relationship with a maintenance contractor in order for them to certify drug and alcohol test provisions are met. In addition, the authors have seen numerous examples of where competitive contracting for maintenance has resulted in cost savings and positively impacted the quality of maintenance services. However, good maintenance contracting requires thorough attention to the art and science of specification and contract development and a dedication to contractor management.

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Several individuals worked on the project. Mark Maggio, a Research Associate with the Iowa Transportation Center worked on the portion of the report discussing handling and safety of alternative fuels, which is contained in Appendix C. The alternative fuels portion of the report was turned into a brief booklet, Alternative Fuels: What You Need To Know," by the American Public Works Association and several thousand copies have been printed and distributed. Winifred Neely, a Masters of Science Student of Sociology and *Midwest Transportation Scholar*, conducted much of the background work on drug testing included in Chapter 4. Ms. Neely is currently completing her thesis on the issue of drug testing in the transit industry. James Dobie, a graduate student in sociology, conducted the background work on current maintenance contracting practices in the transit industry. Mr. Dobie's work was completed by Deborah Johnson and resulted in Appendix B as well as providing material for several of the Gray Boxes, which provide examples of concepts throughout the text. Ms. Johnson is currently a Senior Public Policy Analyst for the ATA Foundation.

There were several transit agency staff members and FTA staff members that provided data and case study examples used throughout the manual. Their assistance has greatly enhanced the practicality of the manual. They include Federal Transit Agency staff members Judy Meade and Shang Hsiung. Transit agency staff members that participated in-depth and in-person interviews include Cindy Howe, Administrative Assistant, and Ben Shaw, Director of Public Works, City of Astoria, Oregon; Ernest Palmer, Transit Manager, Muskegon Area Transit Systems, Muskegon, Michigan; Perry Maull, Transit Director, and James Brown, Operations Supervisor, Space Coast Area Transit, Cocoa, Florida; Donna Wickman, Oregon Housing and Associate Services, Inc, Salem, Oregon; Donald Davis, City Engineer, City of Newport, Oregon; and Carl Dorn, Transit Director and Paul LaPoint, Supervisor, Integrated Transit System, Ottumwa, Iowa. Many other transit agency staff members provided data through telephone interviews and their contribution is gratefully acknowledged but their number is too great to list.

Finally, we would like to thank Jan Graham, Verda Alleman, Margaret Hammer, Sharon Prochnow, BarB Holden, Larry Mendenhall, and Paula Larson. They all have had a hand in the production of the final report.

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CHAPTER 1
GUIDELINES FOR CONTRACTING

The purpose of this chapter is to provide general guidelines for contracting. It starts by explaining the fundamental reasons why transit agencies (and other public agencies) should and should not contract for vehicle maintenance. Clearly, there are benefits and disadvantages to be considered with having an outside private sector contractor perform vehicle maintenance services. The maintenance services included in the discussion range from simple fueling and vehicle servicing, to comprehensive maintenance services. The next section of the report covers the identification of what work should be conducted by contractors and approaches to specifying work activities. The last part of the chapter covers Federal Transit Administration (FTA), state and local requirements for contracting.

When Should Agencies Contract Out for Vehicle maintenance?

No in-house vehicle maintenance is done

When the agency is unable to or chooses not to conduct in-house maintenance of its vehicles, maintenance services are sometimes arranged through informal agreements. Services may be purchased from local maintenance service providers on an "as needed basis," or from one maintenance service provider on an ongoing basis without a written, competitively awarded contract. This procurement approach is known as the procurement of services through "small purchase agreements".

In other instances, an agency may be conducting in-house maintenance, using its own work force, but because of physical limitations it may lack the optimum conditions for performing maintenance in the most efficient manner. Inefficiencies may be caused by one or more of the following:

- The staff may lack state-of-the-art technical expertise. As motor vehicle equipment becomes more sophisticated, the technical requirements for vehicle mechanics and technicians are becoming greater. The increase in high-tech equipment may make in-house forces less effective.

- The maintenance facilities owned by the agency may not be adequate for efficient maintenance operations.

- The in-house facility may lack adequate facilities and equipment to maintain vehicles. This may include the lack of basic equipment such as pits and hoists, or sophisticated diagnostic equipment, or the inclination or desire to maintain alternative fueled vehicles.

In-house vehicle maintenance is done

In yet other situations, an agency may be conducting maintenance in-house using its own work force but may lack the best conditions for performing maintenance in the most efficient manner possible because of lack of qualified personnel, policy, and/or management limitations. Inefficiencies may be caused by one or more of the following:

- The maintenance personnel may be unproductive and/or management may lack the power to generate incentives to improve efficiency. This may be due to carelessness in the development of the labor contract, an agency policy that limits wages to levels below those paid by the private sector, or a lack of advancement opportunities for employees.

- The maintenance shop may be unable to attract appropriate management personnel. This may be due to agency salary policies that preclude the payment of current market wages for knowledgeable managers.

- To keep mechanics up-to-date with modern hi-tech equipment requires constant training. The introduction of new equipment can render the skills of mechanics obsolete. For example, as emission requirements become more restrictive, the rate of technology change is likely to accelerate. New technology and lack of incentives to enhance and update training of staff may result in an inability to complete vehicle maintenance.

Advantages of Contracting for Maintenance Services

Achieving lower costs

Several transit agencies that have procured maintenance services through competitively awarded contracts have achieved significant cost savings. As an illustration of the potential for cost savings, 23 transit agencies that competitively awarded maintenance contracts were surveyed and asked whether they had achieved cost savings through contracting.[1] The transit systems varied in size from 2-vehicle to 47- vehicle fleets. Those surveyed were located throughout the United States. Their responses were as follows:

- Fourteen that had previously conducted in-house maintenance and/or had used non-competitive small purchase agreements to purchase maintenance services experienced savings in maintenance services by using competitive bidding.

- Six had always procured maintenance through the competitive process with written contracts and therefore, had no basis for comparison.

- One reported no cost savings or increases in costs as a result of using competitive bidding.

- One had recently started the use of competitive bidding for maintenance services and was anticipating cost savings.

- One agency was currently initiating an in-house maintenance program.

The results of the survey yielded evidence that cost savings can be expected when agencies competitively contract for maintenance services. Savings may, however, be dependent upon how maintenance is provided prior to contracting (i.e., whether in-house maintenance and/or non-competitive small purchase agreements are used).

Each time a transit agency buys services from a maintenance provider without a competitively awarded contract, that agency is technically buying services through a "small purchase agreement". It is not uncommon for rural and specialized transit agencies to purchase maintenance services one job at a time. Most agencies using public funds are allowed to non-competitively purchase services so long as the total cost of the purchase is below a specific dollar limit.[a] The threshold may be as low as $500 or as high as several thousand dollars, depending upon which governmental body has jurisdiction and how current regulations determine purchases. Any single purchase over the dollar threshold specified by law must be purchased through competitive quotes or bids.

When small dollar value purchases are made, administrative costs of the competitive process are not warranted. This is the rationale provided when agencies are allowed to procure services non-competitively through small purchase agreements.

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[a] A service or product is competitively purchased when prices for services are received from qualified vendors either through written bids or a competitively selected proposal.

When transit agencies competitively award a written contract for maintenance services, rather than purchasing such services using small purchase agreements, quite often the unit cost of providing services decrease. In other words, the maintenance service provider's cost decline due to a consistent flow of business created by the contract. In cases where savings are realized, contractors may be willing to offer services at lower prices in exchange for a business commitment (through the contract).

In the case of businesses, the profit motive leads managers to introduce ways to meet service specifications at the lowest cost. Public agencies benefit from such cost cutting measures when savings are passed on in the form of lower bids for contracts.[2]

Contracting for labor cost savings

Public agencies typically have attractive fringe benefit packages (vacation days, sick leave, retirement programs, and/or insurance benefits). Many times attractive and sometimes excessive benefit packages have been granted for historical and political reasons. When public agencies have been faced with frozen budgets and with salaries below market values, to retain competent employees, they have granted employees attractive benefit packages. Contractors taking over vehicle maintenance functions may be able to avoid the decrease in effectiveness and higher costs generally associated with public agencies' benefit packages.

Contractors may be able to reduce direct labor costs through the use of competitive hiring practices or by providing a better balance of work flow among customers. For example, the maintenance of transit vehicles is similar to the maintenance of other types of rolling stock (e.g., automobiles, trucks, and construction equipment). Because contractors are not required to restrict skilled mechanics and technicians to maintenance on transit agency vehicles additional work can be attracted to make sure that the skilled labor force is always being utilized at the highest value activity. This should encourage contractors to work to continually improve their work force utilization.

Many agencies have restrictive union labor contracts regarding the use of part-time staff and other inflexible work rules. Union rules may restrict the types of work specific craft persons may perform. This restricts individuals from conducting specific jobs regardless of their capabilities to perform other functions. This inflexibility of union contracts may create agency inefficiencies. By avoiding any problems associated with agency union contracts, private contractors may be able to more effectively utilize their employees at the same time they are reducing overall costs to transit agencies.

Technical expertise gained through contracting

Changing and improved technologies are increasing the need to train and update skills of maintenance staff. In the near future, all equipment, even diesel powered equipment, will have electronically controlled engines requiring sometimes extensive knowledge of electronics and new diagnostic techniques and devices. Other hi-tech equipment is becoming more common place includes antilock brake systems, passive restraints (air bags) and electronic transmissions. Within the next decade, vehicles are even likely to have computerized onboard vehicle management systems. The costs associated with training in-house staff to service such hi-tech equipment may be avoided by contracting.

Third party contractors have the ability to serve more than one client. In this way they can distribute the costs of staff with greater technical expertise and even allow mechanics to specialize in particular equipment systems. A contractor's ability to serve several agencies may allow economies of scale which reduce the overall costs of service.

Maintenance employee related expenses saved through contracting

If a transit agency expects to properly manage maintenance employees, at least one member of its management team must understand the technical issues associated with vehicle maintenance. This does not mean that the manager must necessarily have been a mechanic. It does mean, however, that this person will need the expertise to evaluate the skill level and productivity of mechanics who are performing maintenance tasks. For a large agency with many vehicles, dedicating a manager(s) to oversee maintenance employees and activities may not be a burden. For a small agency, however, devoting significant resources to managing maintenance personnel and maintenance activities may well become an undue resource burden. Contracting alleviates the need to manage maintenance employees.

Greater maintenance management expertise gained through contracting

The interests and functions of transit agency staff are heterogeneous and include operations, passenger relationships, marketing, and finance. Because the contractor is more highly focused, there is more opportunity for equipment management specialization at all levels. Contractors are able to more narrowly focus their operations on equipment maintenance. This means that the contractor's entire organization can focus on equipment maintenance and management.

Because contractors specialize in equipment, they are better able to develop relationships and partnerships with vendors, manufacturers, and distributors. As a result, the contractor is likely to be better integrated within the equipment industry. This factor may save the agency money.

Better equipment/facilities gained through contracting

Through contracting, public agencies can specify in the contract the equipment and facilities needed to efficiently complete maintenance work. If the work is to be conducted in-house, the agency may not have the capital funds available to buy equivalent facilities and equipment.

Contractors have a greater incentive for innovation and improved efficiency

Greater efficiency is likely to improve the contractor's profit margin. If, for example, the contractor's revenue is based on a mileage rate (¢ per mile), then it is likely receipts will be maximized by minimizing vehicle down time. When the vehicle is down, that is, it cannot generate revenue for the contractor. Thus the contractor has the incentive to improve vehicle reliability through innovation.

Disadvantages of Contracting

The disadvantages of contracting are much the same for agencies that purchase maintenance services through small purchase agreements and agencies comparing in-house maintenance to contracting out of maintenance. The primary disadvantages include:

Inflexibility to change over the contract's duration

Once a contract has been signed, it may be difficult to change its conditions or terms. If an oversight was made in developing the contract specifications, so long as the contractor lives up to the conditions of the contract, there may be little that can be done to amend the situation until the contract period is completed. To some degree this can be controlled by including a termination clause in the contract. Termination of a contract, however, is an expensive approach to rectifying a specification problem.

Increased need for contracting expertise

Knowledge of contracting, contract development, and contract management skills are critical to successful contracting agreements. A lack of contracting skills seriously diminishes the likelihood of successful contracting. To successfully contract for maintenance services, a member of the management team must become responsible for managing the contracting and monitoring the contractor.

Loss of absolute control over service functions

When an agency performs its own maintenance or when it shops for a maintenance provider on an as-needed basis, the agency has more control over when and how maintenance services are performed. On the other hand, when the transit agency turns over its vehicle maintenance to a contractor, it loses its "absolute" control over maintenance activities. Some transit agencies have had negative experiences with maintenance contractors reported that the contractor was not starting and completing vehicle maintenance work quickly enough, increasing vehicle down times.

Continuous review and auditing of contractor and communication

All contractors should be monitored to make sure their performance is acceptable. Monitoring improves accountability and is likely to result in a smoother relationship between the contractor and transit agency. The agency should inspect the contractor's work on a regular basis. **Gray Box 1-1** identifies an example of maintenance contractor auditing.

Free and open dialogue between the two parties is a prerequisite to successful contracting. This is important in order to assure that both the agency and the contractor understand the other's operating issues. Routine communication can, for example, assist the transit agency and the maintenance contractor in better coordinating their work schedules with respect to vehicle demands. Contractor monitoring and consistent communication, however, place an additional drain on management resources.

Opportunities for corruption.

Contracting may leave transit agencies open to corruption and questionable ethical activities. There have been cases where contractors have been involved in bid rigging or collusive activities. Contracting may also leave public officials open to bribery, kickbacks, and payoffs. The best insurance against corruption is to follow specified guidelines designed for open, competitive bidding, and tightly written and closely monitored contracts. If this is done, the negative aspects of contracting out for maintenance need not occur.

Capitalization of operating costs

When paying for a contractor's services, fees will include the contractor's capital costs for facilities and garage equipment. The contractor's capital expenses become the transit agency's operating expenses. Grant programs for capital funds are likely to have lower agency participation requirements (matching fund requirements) than operating expenses grants. Contracting to have work conducted at the contractor's facility rather than buying a maintenance facility, negates some of the benefits of lower matching requirements of capital grants.

Creating a competitive environment with the private sector

Potential contractors for maintenance services may not recognize the transit agency as a potential client or understand the types of services the agency requires. In the case of small agencies that may work with

A team of two recently hired women started as managers of a transit agency that served a very large rural area. Very quickly they recognized the need to develop a written and competitively awarded contract for vehicle maintenance. They developed a written specification for maintenance service and competitively awarded the contract to a local garage. The garage owner suspected that the transit agency's new managers knew very little about maintenance. He began returning vehicles scheduled for preventive maintenance without performing any preventive maintenance (primarily not lubricating the chassis, and not changing the oil filter and oil).

After a while, the transit managers suspected they were being duped, so one afternoon they bought a creeper (to roll under the vehicle), a pair of coveralls and a lumber crayon. The next day one of them rolled under one of the vehicles with the creeper, marked the oil filter with the lumber crayon, and sent the vehicle to the contractor for preventive maintenance. When the vehicle came back from the garage, the oil filter with the lumber crayon mark was still on the engine.

The agency managers quickly asked the contractor to explain the unusual circumstance. Unable to explain, the contractor repeated the work at no cost. The transit agency managers continued monitoring the work of the contractor in a similar fashion and remained quite satisfied with the contractor's work during the remainder of their tenure with the transit agency.

1-1 Example of Auditing a Maintenance Contractor

unsophisticated maintenance service providers, the providers themselves may be unfamiliar with contracting and require assistance in responding to an invitation for bids. In these cases, it may be difficult to generate competition among potential contractors. This presents a challenge to motivate qualified contractors to bid.

Loss of internal expertise

In shifting from in-house maintenance to contracting, the agency loses the internal expertise of its maintenance workforce. In-house maintenance personnel and managers are likely to provide expertise beyond day-to-day maintenance activities. They are likely to provide assistance to the agency in making vehicle specification recommendations, in making decisions on maintenance policies, identifying vehicle replacement intervals, and other fleet management issues. By contracting for maintenance services, this in-house capability is lost. An example of this is illustrated in **Gray Box 1-2.**

Subjective Analysis of Contracting Feasibility

Transit agency managers must evaluate the feasibility of contracting out for vehicle maintenance. This evaluation is not intended to be a thorough analysis of the benefits and costs of each contracting opportunity. Rather it is, in a sense, a judgmental test of the advisability of contracting for maintenance. Some of the tests the agency manager should consider include:

Legal barriers to contracting

Although it is highly unlikely, the charter of the agency or the laws/ordinances of the governing jurisdiction may preclude the use of contractors for vehicle maintenance. The appropriate laws, ordinances, and charters should be evaluated to ensure the agency has the authority to contract for maintenance.

A rural transit agency with 25 vehicles (all light duty transit vehicles) has its headquarters in a facility which was at one time used to maintain a small fleet of commercial vehicles. The facility, however, had no maintenance equipment or maintenance facilities (pits or hoists). The transit agency hired a mechanic who performed all repairs on a flat floor using jacks and jack stands. The transit agency could not afford to equip the mechanic with other standard vehicle maintenance equipment (e.g., brake lathe, parts washer, and tire tools). As a result, the mechanic conducted a very limited proportion of the maintenance work, while most maintenance work was conducted by local vendors.

The transit agency evaluated the need to have its own maintenance forces. It discontinued in-house maintenance capabilities and laid-off the mechanic. Shortly, it was discovered that the mechanic did much more than maintenance. The mechanic functioned as standby dispatcher, trained vehicle operators in pretrip inspection procedures, and performed servicing functions on all vehicles. The agency had lost the internal capabilities of the mechanic when it discontinued in-house maintenance. As a result, the mechanic was hired back as the agency's lead driver.

1-2 Example of the Loss of Internal Expertise When Contracting For Maintenance Services

Aggressiveness of the union

In most cases, a union will view contracting as an attack on the employees it represents. Expected cost savings may not be worth the likely disruption of service, the loss of morale by other employees, the legal costs, and other associated costs. As a result, contracting may not be perceived as a feasible option.

Sound reasons for contracting

Contracting should be implemented only if there are sound economic grounds to do so. Contracting may be seen as an opportunity to eliminate problems with in-house maintenance functions or as a mechanism for eliminating a group of difficult to manage employees. Contracting to eliminate a difficult management problem is not based on sound economic grounds.

Does top management advocate contracting?

If top management does not advocate contracting and is not likely to change its position even with compelling information indicating the benefits of such a change, there is no reason to recommend it or to conduct a detailed feasibility study. **Gray Box 1-3**, presents a case study where a policy board did not advocate contracting for maintenance services.

Financial Feasibility Analysis

The next step in the analysis to determine the feasibility of contracting is to perform a financial evaluation. The purpose of such an evaluation is to determine the likely savings of procuring maintenance services from a contractor.

Except in unusual cases, there is clear evidence demonstrating cost savings for small agencies that switch from buying maintenance through small purchase agreements to competitively awarded contracts. One such case may be in extremely remote locations where maintenance service providers are so limited that there is no opportunity for competition. This is, however, highly improbable given that the type of transit vehicles that

To illustrate the importance of subjective analysis, the case of a county government operated transit agency provides an example. The policy board of the county decided the county maintenance shop would perform maintenance and provide fuel at its cost. This meant it would charge only for the mechanics' hourly wages while they performed the maintenance, charging for parts and fuel at cost. The policy board felt it was providing a great service to the transit agency by keeping the cost of maintenance to a minimum. The county shop, however, was understaffed and focused primarily on maintaining equipment for the secondary road department. This meant anytime a transit vehicle was brought in for maintenance, road maintenance equipment, the sheriff department's vehicles, and the secondary road department cars and trucks were given a higher priority.

Because of their low priority, when agency vehicles needed maintenance work, they were tied-up for a lengthy period. Because the agency could not afford to have vehicles down for long periods, preventive maintenance was deferred. The agency director knew if she went to the policy board and asked to contract with the private sector, the policy board would deny the request because it would increase maintenance costs.

Instead, the transit agency manager successfully requested to contract for fuel. This seemed logical to the board, since vehicles were positioned throughout the county and county fueling was conducted at a few central facilities. Contracts were established for fuel at locations that reduced deadhead travel.

After successfully contracting for fuel, the transit manager had a positive experience with contracting. This made a more convincing case for further contracting of maintenance services. In this case, conducting a subjective feasibility study led to a politically feasible solution.

1-3 Illustration of the Use of Subjective/Qualitative Analysis

operate in remote locations are likely to have the same maintenance requirements as automobiles and light duty trucks. There are very few locations in the United States lacking multiple service opportunities for automobiles and light trucks. **Gray Box 1-4** presents another unusual case where contracting for maintenance services would not be a financially viable option.

Agencies debating whether to conduct maintenance services in-house or to contract out for vehicle maintenance need to conduct a financial analysis of the two options. Developing an exact cost comparison is likely to be difficult or impossible. This is because the options are not always comparable and only subjective comparisons may be possible. The cost of conducting repeat maintenance work (e.g., defective or misdiagnosed repairs) in-house are absorbed by the agency. On the other hand, when a contractor completes the maintenance, it can be asked to guarantee the work. This places the cost of repeat work on the contractor. When work is conducted in-house, repeat work has a "real" cost in both dollars and time spent. Without a detailed data base, however, it may be very difficult to assess the actual costs of repeat work.

Other attributes difficult to compare are costs due to poorly equipped facilities or facilities with poor layouts. These involve real costs that should be included in cost comparisons. For most practical purposes, simplifying assumptions can be used to develop an adequate basis for comparison of the contractor's labor costs versus in-house costs.

A very small transit agency in a small urban community operates a demand responsive service for the elderly and handicapped. The agency's board of directors consists of community leaders.

One of the board members has a vehicle maintenance shop for his business and is willing to have one of his employees perform routine preventive maintenance at no cost (changing the oil and greasing the chassis). Other members of the board have asked car dealers, tire stores, and maintenance service stations to provide maintenance on a rotational basis in exchange for advertising on the outside of the vehicle. Several local business have agreed to contribute supplies and services. Occasionally, for costly items (such as tires) the agency will purchase supplies from local businesses at cost.

In this case, contracting for maintenance services is not feasible because maintenance services are being contributed to the agency.

1-4 An Example Where Contracting is Not Financially Feasible

Determining true direct labor costs

Direct labor costs refer to the time employees spend conducting activities that involve maintaining vehicles. Indirect labor costs involve time that does not directly enter into maintaining vehicles but which is necessary to support maintenance.[3] Clearly, activities such as vacation time, holidays, insurance benefits, and sick leave are indirect costs that must be taken away from the total available hours dedicated to maintenance. An illustration of the calculation of available mechanic hours is shown in **Gray Box 1-5**.

When mechanics are on the job, they are not continuously maintaining vehicles. In illustration, **Figure 1-1** shows the distribution time spent by mechanics during working hours. These mechanics were employed by public works organizations in cities. In many cases they had access to better facilities than those available to most small urban and rural transit agencies that conduct in-house maintenance. Improved facilities allow mechanics to spend a greater share of their time conducting mechanical work. Most city garages, for example, will have well-stocked parts supply rooms. Their mechanics, therefore, will not be required to travel to and from parts supply houses.

Figure 1-1 presents the findings of time analysts who studied public works mechanics. They found mechanics spend only half of their available hours conducting actual mechanical work. Admittedly, some of the tasks that are not mechanical work could be considered part of a maintenance job. As a "rule of thumb", however, well managed public works shops are generally able to bill their users 50 to 65 percent of the total available mechanic hours. If public works mechanics spend 100 hours on the job, the public works department is likely to be able to bill approximately 60 hours (60%) to the using departments (e.g., to the city's parks department, street department, or sanitation department).

Assuming that the number of available hours per mechanic is roughly 1,590 hours per year (See **Gray Box 1-5**), the total number of direct hours (assuming 60% of available hours are direct) is 954 hours per year.

Determining the cost of direct labor

The next step is to develop a cost that may be used to compare in-house costs to a contractor's labor costs. Clearly, agency managers performing this calculation would utilize their agency's hourly cost for

Below is a calculation of the total time available for a typical mechanic. Available time are the hours where they are available to conduct vehicle maintenance, exclusive of possible overtime. This does not mean mechanics are conducting maintenance for the entire period. They will, for example, conduct other indirect activities during the period they are available, including filling-out paper work, attending staff meetings, and travelling to and from road calls.

The calculation assumes the employee receives three weeks of vacation, does not work during 12 holidays, and averages 9.6 percent of the total remaining time on sick leave and at negotiated breaks (coffee breaks). In addition, mechanics average two-weeks per year of unavailable time for vendor and community college training and training on new drug testing requirements. Out of the total annual hours, mechanics are available for 1,590 hours.

	Hours
Total Available Hours Per Year/per Mechanic	2,088
12 Holidays at 8 Hours	- 96
3 Weeks of Annual Vacation	- 120
Sick Leave and Negotiated Breaks 9.6 percent	- 202
2 Weeks of Training	- 80
	1,590 Hours

1-5 Example Calculation of Total Mechanic Available Hours

mechanics, including the true fringe benefit and overhead rates. **Gray Box 1-6** presents a hypothetical method for determining the total cost of an average mechanic for one year. The example resulted in a cost of $39,000 per year. This included an average mechanic's salary, fringe benefits, and a modest factor for administrative overhead. Assuming there is a total of 954 direct labor hours per year per mechanic, the cost per direct hour is roughly $41 ($39,000 ÷ 954 hours = $41.88 per hour). This number is likely to be conservative because of the assumptions made, but the $41 per hour is a cost that could be used for comparison with a contractor's labor cost.

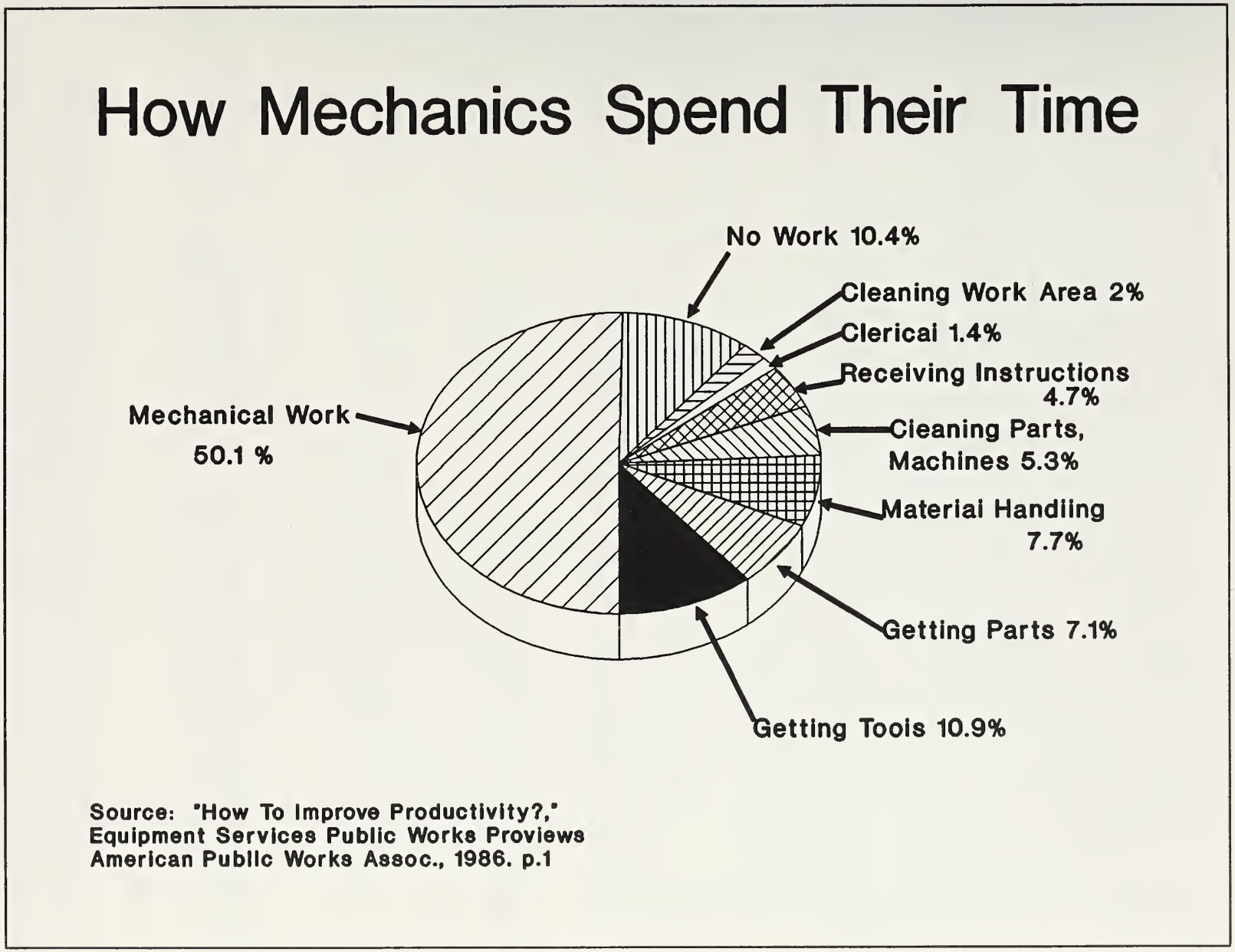

Figure 1-1 How Mechanics Spend Their Time

A survey of maintenance personnel salaries at state departments of transportation is conducted on a regular basis by the Transportation Research Board*. The most recent survey results were taken from a 1989 study. The report lists average salaries by region - North Atlantic states, South Eastern states, Mississippi Valley states, and Western states. The regional average monthly salaries of motor vehicle mechanics varied from $1,959 per month in the North Atlantic states to $2,364 per month in the Western states. The overall average was $2,099 per month or about $25,000 per year.

In addition to salary, most employees receive a package of fringe benefits including a retirement program, health insurance, workmen's compensation, uniform expenses, and tool allowances. A fringe benefit rate of 30% or more is not uncommon. Using the average salary identified by the Transportation Research Board, the average mechanic receives $32,500 in salary and benefits ($25,000 x 1.3 = $32,500).

To evaluate the total cost of salaries, an administrative overhead charge must be added to the total salary and benefit package. Although the overhead for maintenance is likely to be relatively high because of costly facility and maintenance equipment costs, in this example it is assumed that the overhead cost is only 20%. Therefore, the total cost of one mechanic receiving average pay for one year is $39,000 per year ($32,500 x 1.2 = $39,000)

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* "Progress Report on Maintenance and Operations Personnel," Transportation Research Board Circular, No. 347, April, 1989.

1-6 Example of Fully Burdened Labor Cost Calculation

Developing a Scope for Contracted Services

After deciding that contracting for maintenance services is in fact feasible and likely to result in benefits to the transit agency, the next steps are to:

- Focus on the services to be procured.
- Determine what contracting is likely to accomplish.
- Determine how to measure when the original intentions of contracting have been achieved.

These are the first steps to be taken in defining the contract. The development of the contract will gradually become more detailed. It is to be noted that these first steps are often quite difficult.

Mission statement

The agency needs to identify what functions the contractor will assume. This broad statement of the purpose for contracting is a **mission statement**. A simple mission statement is provided in **Gray Box 1-7.** From reading this mission statement, it is clear there are many details that must be further refined. The contractor is expected, for example, to develop a preventive maintenance program for vehicles. Inputs to the development of the program, however, are not defined, nor is the procedure for approving the contractor's

A rural transit agency is developing a mission statement for a competitively awarded contract. A simple mission statement could be developed by agency management for contracting of comprehensive maintenance services and could be phrased as follows - "This agency's mission is to develop a contractual relationship with a maintenance service provider for preventive and corrective maintenance and fuel. The contractor will be expected to:

- develop a thorough preventive maintenance program for the agency vehicles,
- schedule and perform preventive maintenance for vehicles,
- perform corrective repairs to vehicles when necessary,
- refuel vehicles,
- provide for safe storage of vehicles, and
- maintain vehicle maintenance records, including identifying and processing warrantee claims."

1-7 Example of a Simple Mission Statement

preventive maintenance plan. These details are all part of the contract specification and will be the focus in later stages of the contracting process.

Objective

The agency must have a good idea of what it intends to accomplish by contracting. Objectives of contracting should be quantitatively measurable so progress toward achieving stated objectives can be tracked. As a result of a thorough preventive maintenance program, for example, improved vehicle reliability is expected. A vague objective for contracting for preventive maintenance services would be to improve reliability. Improved reliability is vague because there is no measurement or parameter to identify when reliability has been accomplished. A better objective may be to reduce road calls to a lower level. This should be based on past historical data. An example of a fairly broad list of objectives for contracted maintenance is included in **Gray Box 1-8**.

Each objective must be accompanied by a very brief definition of the meaning of specific terms. For example, the last objective in **Gray Box 1-8** refers to unscheduled repairs. An unscheduled repair may be defined as any repair that is not made during a routine preventive maintenance inspection or one not scheduled during an inspection.

Deadlines

Objectives should have specific deadlines for completion. In **Gray Box 1-8**, for example, the objective of diminishing unscheduled repairs to 30 percent or less of maintenance expenses should have a specified deadline. The deadline for accomplishing the objective could be by the end of the first year of contracting.

Controls

Controls measure the progress towards objectives. Controls for quantified objectives are clear. An objective to reduce the number of road calls has a clear control - counting the number of road calls.

A rural transit agency that plans to contract for comprehensive maintenance services has identified objectives it wishes to accomplish through contracting for maintenance services. These objectives are:

- certification of a drug free workforce,
- no deferral of preventive inspections,
- annual maintenance budget less than XXX dollars, and
- unscheduled repairs are to account for no more than thirty percent of maintenance expenses.

1-8 Example of Contracting Objectives

Exercise I

Exercise Objective: To have participants become familiar with the steps of identifying the scope of a contract.

Exercise Steps

1. Identify the characteristics for a transit agency to be used in the exercise. Characteristics include:

   - What is the agency's operating environment (large urban, small urban or rural)?

     _____.

   - What type of services will be provided (fixed route, demand responsive)?

     _____.

   - How many vehicles are included in the fleet and what types of vehicles are they (e.g. 40 foot coaches, 16 passenger vans)?

     _____

     _____.

2. Identify vehicle maintenance characteristics prior to contracting.

   - What organization currently conducts the agency's vehicle maintenance (including fueling and corrective maintenance)?

     _____.

   - Is there a satisfactory preventive maintenance program in place?

     _____.

   - What is the agency's current maintenance budget?

     _____.

   - Which person at the agency is responsible for providing vehicle maintenance?

     _____.

3. Develop a mission statement and identify the specific services the contractor should provide?

4. Define three objectives for the contract and corresponding deadlines for accomplishing the objective and a control.

Objective 1.

Objective 2.

Objective 3.

Specifying Maintenance Services (Statement of Work)

The contract specification identifies what the transit agency wants to buy and what the contractor should respond to when compiling its bid or proposal. Because the services requested must be clearly understood by prospective contractors, the specification should be written in clear and unambiguous language. It should be written in sufficient detail so the potential contractor understands exactly the complete scope of services requested and the minimum service level the transit agency will find acceptable.

An unclear contract specification can backfire and result in higher costs to the agency. A Cardinal Rule of Contract Law is that "a contract will be interpreted against the person who wrote it."[4] Vagueness and ambiguity in contract language may have an alternative interpretation advantageous to the contractor, will be ruled by a court in favor of the contractor. As a result, unclear wording may be quite costly.

In the previous section, the mission and objectives for contracting were developed. The specification builds on the contracting mission and objectives. The specification for services should be constructed in two steps. The first is to identify what the agency desires and can afford. The second is to identify specific attributes of the service desired.

What does the agency desire and what can it afford?

When developing a service specification, the agency is developing a statement of the minimum level of service it will accept. This may provide the agency the opportunity to formally define quality attributes for maintenance service and even better design future contracted maintenance services so the quality of services is improved. Suppose, for example, that a transit agency does not have its maintenance records computerized and maintenance reports are not prepared by computer. Computerization generally improves the flow of information in support of maintenance management decision making. The use of a structured maintenance management system to support decision making has been reported to commonly reduce maintenance costs from ten to 25 percent. Because computerization of maintenance record keeping is desirable, the agency can require that the contractor keep agency records on a computerized maintenance management information system. This specification can identify the type and frequency of reports the contractor will prepare. To better understand the level of services the agency should specify, the following four questions need to be answered:

What maintenance activities are currently planned? All maintenance activities should be formally or informally planned. Preventive maintenance activities should be highly planned - each element to be checked, changed, lubricated or adjusted during an inspection should be identified on a check list and inspections should be made at predetermined intervals. Less rigidly planned maintenance activities may include procedures to take care of a vehicle break down. While evaluating the specifics of what to contract, at the very least, existing plans for the items listed in **Gray Box 1-9** should be identified.

What scheduled maintenance is actually being done? At many agencies, maintenance activities are not conducted according to a plan. Preventive maintenance inspections, for example, may be scheduled but then occasionally deferred or the inspection may not be conducted as completely as desired. It is important to understand the differences between planned and actual maintenance and why these differences occur. If, for example, vehicles are regularly missing routine preventive inspections because the vehicles cannot be released from route service, the problem is likely to be aggravated by the involvement of a contractor. As an example of a modification intended to rectify the conflict, the contract may limit the contractor to performing preventive maintenance during nonservice hours (e.g., at night) to alleviate any problems.

The comparison between existing planned activities and what actually occurs provides the transit agency with a sense of where it has been and where it would like to be in the future. Not knowing where an organization has been and therefore, not knowing where it intends to go is sometimes termed the "Alice in

To prepare for specification of services, the agency should review its current plans for the following maintenance services.

Activity	Identify
Washing and cleaning of vehicles	Frequency - What is the procedure for washing and cleaning?
Fueling and minor servicing	How are fuel and consumables purchased - How are consumption rates reported?
Pretrip inspection	Who conducts inspections? what inspection procedures are used? what are the qualifications of the inspector(s)?
Preventive maintenance inspection	Frequency and scheduling - what inspection is used? What items are checked, lubricated and changed? What facilities/equipment are used? What are the qualifications of the inspector(s)?
Minor repairs	Scheduling - Who conducts them? What facilities/equipment are used? How are repair parts provided?
Major repairs	Scheduling - Who conducts them? What facilities/equipment are used? How are repair parts provided?
Maintenance record keeping	What is reported? What are reports used for? How accurate are records?

1-9 List Of Maintenance Activities To Review

Wonderland Syndrome," discussed in **Gray Box 1-10**. Questions that should help a transit agency identify deficiencies contracting may correct include:

- Are drivers identifying maintenance problems, before they occur, during their pretrip inspections?
- Is driver abuse commonly the cause of maintenance repair work?
- Are routine preventive maintenance inspections performed when scheduled? If not, why not?
- Is there a plan for routine preventive inspection including checksheets and does the plan at least meet manufacturer's recommendations?
- Do maintenance records provide an accurate picture of the cost of vehicle operations and of the current condition of the vehicles? If not, how can reporting be improved?

Understanding the character and performance of maintenance services in the past is the key to understanding desirable attributes of future maintenance services. Not having a clear definition of where an organization is headed is a problem that many business and governmental agencies face. This problem is sometimes referred to the "Alice in Wonderland Syndrome."

"Oh Dear!" said Alice to the Cheshire Cat upon coming to the fork in the road. "Which way should I go?"

"Where are you going?", said the Cheshire Cat to Alice.

"I don't really know", answered Alice.

"Then it don't matter", replied the Cheshire Cat.

The first step in introducing any improvement to a maintenance system is to develop a clear understanding of current conditions. If there is no clear understanding of how current maintenance practices contribute to the performance of the transit agency and an understanding of where the maintenance program is headed, then it really does not matter what direction contracting takes. This is the predicament that Alice found herself in when she encountered the Cheshire Cat at the fork in the road. Even if the agency has a clear understanding of what it would like to achieve through contracting, it should have a clear understanding of where it currently is. Being able to pinpoint a destination on a roadmap is of little value unless individuals are able to identify where they currently are on the same map.

1-10 "Alice in Wonderland Syndrome" - Illustration of The Importance of Current Conditions

- Do fuel and oil reports and mileage reports provide accurate consumption information? If not, why is this information unavailable?
- Is repair work being identified during routine preventive inspections or are the majority of repairs being made as a result of breakdowns? If so, how can preventive maintenance be made more effective?
- Are vehicles too frequently tied-up for repeat or misdiagnosed repairs? If so, what is the root cause of repeat or misdiagnosed work?
- Does the current maintenance system have the appropriate equipment and diagnostic devices to perform maintenance for vehicles?
- Are repairs deferred or delayed due to the unavailability of parts or a lack of maintenance labor?

What services would be most desirable to the agency? Developing a new contractual relationship presents an opportunity to specify maintenance services the transit agency cannot provide or afford to provide for itself, or that it cannot demand when purchasing maintenance through small purchase agreements. **Gray Box 1-11** identifies a number of services transit agencies have requested from a contractor that they did not receive before contracting. The agency should use this opportunity to alleviate some the deficiencies identified.

Several transit agencies utilize the initiation of a new contract as an opportunity to improve maintenance services. Some of the new services or improved level of services they requested of their contractors included:

- The contractor will develop a complete preventive maintenance program which meets the vehicle manufacturer's recommendations and recommend additional elements beyond those recommended by the manufacturer to improve vehicle reliability.
- All services should begin within four hours of delivery of the vehicle, twenty-four hours per day, all seven days of the week.
- Vehicle down-time must be limited to four percent of the normal service hours.
- The contractor must maintain computer files of maintenance activities conducted and summarize vehicle maintenance parts and labor by major vehicle component group for every vehicle and the entire fleet monthly and annually.
- The contractor will provide vehicle storage facilities heated to no less than 45 degrees fahrenheit.
- The contractor will provide a qualified mechanic to fuel, service and inspect each vehicle before it pulls out in the morning.
- The contractor guarantees all minor repairs (cost less than $300) for 90 days and major repairs (cost more than $300) for 180 days.

1-11 Examples of New Services Obtained When Initiating the Practice of Contracting For Maintenance Services

What is the minimum level of services the agency will accept? Now that the agency has gone over what it would like, a realistic examination should be made regarding the minimum level of services the agency is willing to accept. The most desirable services may not be readily available in the local area, or they may require transporting vehicles farther than desired. In addition, the agency may not be able to afford the improvements in maintenance services it desires.

Knowing what is currently planned, what is actually done, what the agency would like to have done and the minimum the agency will accept, helps to identify what the agency wants. These service attributes and service requirements can be divided into:

- Management procedures, policies and plans - including development of preventive inspection procedures, work authorization, work scheduling procures, operating hours, and work quality assurance mechanisms.

- Records and information - including job reports and notification of work required, summary reports and data, invoices and billing.

- Services and materials purchased - including towing, fuel and fluids, daily inspections, emergency work, backup vehicles, preventive inspection, repair work, repair parts quality and availability.

- Labor and contractor management - Number, qualifications, and availability of mechanics and technicians, level of maintenance management assistance from the contractor, and availability of on-site management.

- Maintenance equipment and facilities - Storage and maintenance space required, diagnostic equipment, and maintenance equipment.

- Performance monitoring mechanisms - Cost/pricing, equipment reliability, equipment downtime, and work guarantees.

Specifying Maintenance Services

One of the basic problems of writing a specification for maintenance services is that the science of specification writing was designed for purchasing construction services or for the purchase of a piece of equipment. Both construction and procurement of equipment have a specific end product. These specifications can be much more exact than a maintenance specification. A facility or a piece of equipment can be studied and broken into component parts. Maintenance, on the other hand, is ongoing and should be dynamic and change with conditions. As a result, tightly worded specifications, where the agency tries to account for every contingency, are likely to result in disaster. Specifications should be general enough so a responsible contractor has the flexibility to develop efficient maintenance solutions, and not so rigid that the contractor cannot meet the requirements of the contract or the expectations of the agency.

Specifications for the construction of facilities or for equipment generally follow one of the four approaches listed below:

- A technical specification that describes the work in detail. This type of specification identifies the material and workmanship required to complete the services. It is based on information gained from past experiences with the services.
- A performance based specification describes what is expected of the service and allows the contractor to identify the most effective materials and methods to achieve the performance required. Performance of a maintenance contractor, for example, may be evaluated on cost per mile and miles per roadcall.
- A reference specification identifies methods and materials by referencing independent standards created by organizations like the American Society for Testing and Materials (ASTM). A maintenance service specification could, for example, require Automotive Service Excellence (ASE) certified mechanics and technicians.
- Proprietary specifications refer to a brand name or model. For example, in an equipment maintenance specification, the agency may choose to limit the contractor to specific brands of parts, Original Equipment Manufacturer (OEM) parts, or approved equivalent.

1-12 Traditional Approaches to Specification Writing

Traditionally, specifications involve one or a combination of four types. These are described in **Gray Box 1-12.**[5] Because they are oriented towards specifying facilities or equipment, none of the standard specification methodologies are entirely appropriate for contracting for services. Instead, contracts for services should use one of the following two approaches:

Specifying based on outputs. This involves identifying the services required and the minimum necessary acceptable performance level. This is the preferred method for specifying services because it allows the contractor the flexibility to design the most efficient services to meet the agency's desired outputs.

Specifying based on resources. This involves specifying the personnel, materials, and the way in which the contractor delivers the services. Like descriptive specifications (see **Gray Box 1-12**), specifications that deal with resources, require a great deal of knowledge about the services and materials used. In addition, they tend to reduce the contractor's flexibility. In many cases, however, transit agencies may choose to use a specification based on resources even though it is more difficult to properly prepare. The uncertainty of service output has lead agencies to specify contracts based on resources. The worst possible case of uncertainty regarding output results in contracts with vague specifications and pricing based on indefinite quantities of time and materials (time and material contracts).

In most cases, good contracts for maintenance services will use a mixture of both approaches. The contract may, for example, specify an output based measure requiring the contractor to have the vehicles available 95 percent of the time (a contractor output). If vehicles are unavailable, the contractor must provide a substitute at its own expense. At the same time, the agency may require the contractor's mechanics to maintain a level of competence through manufacturer's training or certification (a contractor resource).

Specifying with the use of outputs

Specifying based on outputs is the preferred method for describing services because it allows the contractor to develop the most cost effective services to meet the requirements of the contract. Contracts based on outputs are sometime difficult to manage because of the difficulty of measuring the level of output. One of the measures of a maintenance contractor's output would be the availability of vehicles. Presumably vehicles would be more available when the contractor is doing a good job and less available when the contractor is doing a poor job. Measuring availability and holding the contractor accountable for vehicle availability (or unavailability) requires two things. First, the agency should have a simple measure for vehicle availability. Second, the agency should know what availability levels are normal and expected. Both require data and data analysis. Teppler (1984) has identified four attributes of good output specifications.[6] They are completeness, clarity, measurability, and focus.

Completeness. Outputs measured should be complete and comprehensively measure all the attributes of service are of concern. Most agencies are more interested in maintenance services that leads to reliable vehicles than in acquiring the least expensive maintenance work. Most transit managers know that "cheap" maintenance work will likely lead to bigger problems down the road as the vehicles age. Cost of services, however, is still important. Therefore, specifications should be sensitive to both price and quality.

In general, the performance of maintenance services should be comprehensively measured by evaluating three attributes - reliability, maintainability, and availability. These attributes can be measured through simple ratios that serve as indicators of these three attributes. The definitions of these attributes are as follows:[7]

- Reliability is the likelihood of the vehicle and its components operating properly at any given time.
- Maintainability is a measure of the labor and material costs needed to operate the vehicles, repair failures, and perform preventive maintenance.
- Availability is the likelihood of a given number of vehicles being operational at any one time.

Gray Box 1-13 lists indicators commonly used to measure these three attributes. The contract could, for example, specify the minimum number of miles between roadcalls for mechanical reasons, based on past experience, and require that vehicles must be available 95 percent of the time during operating hours. Maintainability would be measured in the contractor's price for services and price of maintenance services could be requested based on dollars per mile. The number of roadcalls and the 95 percent availability factor would

Common Measures of Reliability:

- Miles per Roadcall
- Roadcalls per Vehicle per Month
- Roadcalls for the Fleet per Month

Common Measures of Maintainability:

- Maintenance Cost per Vehicle Mile
- Maintenance Cost per Vehicle
- Maintenance Labor Cost per Vehicle Mile
- Maintenance Materials Cost per Mile
- Fuel and Oil Cost per Vehicle Mile

Common Measures of Availability

- Number of Vehicles Unavailable Due to Maintenance
- Hours Vehicles are Unavailable Due to Maintenance Divided by the Total Hours of Service Operation
- Number of Spares Required to Meet Service Requirements

1-13 Example of Reliability, Maintainability and Availability Indicators

have to be specifically defined in the contracting documents. A roadcall for mechanical reasons, for example, could be defined as follows:

> Anytime a vehicle is delayed for more than five minutes due to safety or mechanical problems. Roadcalls that are caused by mis-operation of the vehicle by the driver, a traffic accident or by abuse of the vehicle by a passenger are not considered to be the fault of the maintenance contractor.

Clarity and measurability. The description of the output requirements should be simple and clearly stated. The use of measurable parameters should be used whenever possible. In the above definition of a roadcall, for example, an objective measurement is used (a five minute delay).

Often, specifications will use adjectives to describe the quality of work like "workman-like" or to indicate swift scheduling of maintenance work by stating the transit agency's vehicles will be given "priority." Such terms are not measurable and lack definition. They may provide the transit agency with a false sense of guaranteed quality. Such terms should be avoided and the agency should identify what it really intended with the use of the adjective and develop a quantifiable measure. If, for example, quality is measured by diagnosis and proper completion of maintenance work the first time the vehicle is brought in, state the definition and identify the minimum level of acceptable quality.

Focus. The levels of output measured should focus on the mission of the agency and not conflict or redirect the agency's goal. In illustration, one transit agency turned over the maintenance and servicing of its fleet to a contractor. The contractor was required to clean the buses on a daily basis and pass, what was essentially, a white glove test. Although clean buses are important, the level the contractor was using to clean the buses on a daily basis was beyond what the agency's in-house forces could, and had, accomplished. Clearly, this level of cleanliness requires additional contractor effort and is beyond the agency's mission.

Specifying with the use of resources

Although it is always preferable to specify based on outputs, specifying based on resources often provides agencies with more security - "they know what they are buying." The simplest case of specifying based on resources involves purchasing services based on an indefinite quantity of time and materials. For small jobs, the administrative cost associated with an output based specification may not be warranted. An output specification should, in measurable terms, clearly identify what is required of the contractor. If, for example, the agency desires only experienced mechanics to work on their vehicles, a measure of competence must be identified. Although the determination of competence may be subjective, using an evaluation of the credentials and backgrounds of the mechanics identified in the contractor's proposal, a measurement of competence must, nonetheless, be identified. To simply state the contractor will provide the agency the services of two "experienced mechanics" is not sufficient.

Common items addressed and described in a resource based specification are listed in **Gray Box 1-14**. When specifying based on resources, the details of each service attribute must be addressed. Suppose, for example, the transit agency wants the contractor to have hoists adequate to work on two buses at one time. The agency may specify that the contractor should have two hoists with a lift capacity of 36,000 lbs, and clearance for a vehicle ten feet high and forty feet long.

Specifying with a mixture of resources and outputs

In most cases, specifications are not based solely on resources or outputs but on a mixture of both. A specification may, for example, include a downtime performance requirement (an output) but at the same time require a member of the contractor's staff to have had factory training to maintain a particular brand of wheel chair lift on the transit agency's vehicles. Clearly, it is always preferable to minimize specifying based on resources. Practically, however, it may not be possible to do so.

Maintenance Services Requested

Maintenance and Vehicle Servicing - Fuel, washing, towing/roadcall service, routine preventive maintenance, overhaul/rebuild, component rebuilding, parts inventory, and body and glass.

Maintenance Management and Consulting Services - Vehicle and maintenance record keeping and information systems, development of preventive maintenance programs, equipment replacement decision making, and vehicle specification writing.

Maintenance Facility and Maintenance Equipment Requirements

Vehicle Storage Area - Space required, security, heating needs.

Maintenance Area - Number of maintenance bays or maintenance lanes.

Office Space - Space for on-site transit agency management, dispatchers and other office personnel.

Drivers Room - Space and facilities for drivers to meet, receive assignments, lounge area.

Space for Vault Tending - Location and special facilities for pulling fare boxes, securing money.

Maintenance Equipment/Facility Requirements - Number of pits and/or hoists, diagnostic devices, and other specialty equipment and tools.

Fueling Facilities - Quantity and type of fuel pumped.

Bus Washing and Cleaning Equipment - Wash rack and cleaning equipment.

Service Quality Requirements

Vehicle Down Time Requirements - E.G., specifying the maximum time before work begins on a vehicle.

Warranty of Repairs - How long are repairs warranted, prorating of warranties, mechanism for negotiating warranty disputes.

Liaison with Contractor - Mechanism for determining condition of vehicle when it is delivered to contractor, when the vehicle is returned to the transit operator how is its condition assessed, how is the fault for a vehicle failure determined (driver abuse of faulty repair), how frequently should the contractor meet with the transit agency to review the condition of vehicles.

Qualification of Mechanics - Requirements for mechanic's experience, certification, manufacturer's training; requirements for qualification to work on specialty items (e.g. wheel chair lifts, fare boxes, radios).

Qualifications of Management - Requirements for management experience with similar organizations, manager interview.

1-14 Items Commonly Identified In Resource Based Specification

Pricing of Services

Pricing Mechanisms

Time and Materials - Reference of time standards or the development of time standards to determine if pricing is reasonable and fair.

Price Per Vehicle Mile - Services that are included in the price per mile for maintenance services.*

Fixed Fee for the Contracting Period - Mechanism for determining how fee is to be adjusted if work is more or less than expected.

Cost per Work Element - Pricing based on routine work elements, e.g., preventive inspections, vehicle wash, or brake reline. Mechanism used to negotiate additional services.

Basis for Pricing Parts, Consumables and Fuel

Price Adjustments - Mechanism for escalating prices over the contract period.

Maintenance Information

Equipment Information - List of vehicles and their characteristics.

Maintenance Work Information - The frequency of repairs, the number of mechanic hours for maintenance in the past with the same vehicles.

Maintenance Activities - Descriptions of maintenance activities, e.g., a preventive maintenance inspection check sheet.

Contractor Selection Criteria

Basis for Calculating Cost - The methodology used to evaluate and compare the costs of prospective contractors.

Proposal Selection Criteria - If a proposal is requested (as opposed to a bid), specific selection criteria and the weight placed on each criterion.

Contractor Stability - Bonding requirements, insurance requirements, request for financial statements.

References - References from other clients of the contractor and from the contractor's suppliers.

Parts Requirements

Parts Storage Requirements

Parts Quality - For example, requiring all parts be original equipment manufacturer's parts or approved equal.

Parts Quantity - The volume of parts the contractor should routinely stock. The contractor should inventory all parts needed for preventive inspections, tune-up, brake relining, and all belts and hoses.

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* Transit operators that choose to purchase services on a cost per mile basis will often exclude major repairs from the cost per mile. The costs of all drive train repairs, for example, may be exempt from inclusion in the contractor's per mile price quote. The transit agency would then negotiate with the contractor for the cost of repairing an engine or transmission. The purpose for exempting major repairs from the routine price per mile is to reduce the contractor's risk of incurring the cost of a major repair. By not including in the price per mile the cost of major repairs, the contractor can offer a lower price and the transit agency is assuming the risk of a major failure.

1-14 Continuation of Gray Box 14

Exercise II

Exercise Objectives: To have participants understand the development of a work statement and the techniques used to define services requested.

Exercise Steps

Based on the mission statement and objectives developed in the Exercise I, answer the following questions:

1. For one of the services identified in the mission statement, answer the following:

   - Describe what is currently planned to be done (planned actions may, and are usually not, the same as what is actually occurring).

   _____

   _____

   _____

   _____.

   - How do the planned actions vary from what is actually being done?

   _____

   _____

   _____

   _____.

   - What would you like to be done?

   _____

   _____

   _____

   _____.

   - What is the minimum performance level you will accept?

   _____

   _____

   _____

   _____.

2. For the same service dealt with in the question number 1, name several outputs that could be used to specify the quality of service or performance desired.

   a. _____

   b. _____

   c. _____

   d. _____

   e. _____

3. For the same service, identify resources that could be used to specify the quality of service or performance desired.

   a. _____

   b. _____

   c. _____

   d. _____

   e. _____

Basic Principles of Contracting: Federal, State and Local Requirements For Contracting

Federal requirements: Third party contracting guidelines - Circular 4220.1B.

This circular sets forth standards for third party contracting involving funds granted to agencies by the FTA.[b] The circular intended to set forth standards for contracting which, "to the maximum extent feasible, defers to the States to establish standards rather than setting national standards."[8] Deferring to standards set by the states is an effort to acknowledge the intent of the new Federalism reflected in the President's Federalism Executive Order #12612.

In practice, the contracting behavior of most agencies is often governed by local or state contract laws and regulations which tend to be more restrictive than comparable federal laws and regulations. The federal guidelines, for example, do not require an agency to competitively award a contract with sealed bids or competitive proposals until the total award reaches $25,000. Most local and state agencies require competitive awarding of contracts even when much small amounts are involved. Public transportation agencies usually utilize a mixture of federal and state and/or local funds, and therefore, any procurement of services must utilize the most restrictive requirements. Because local and state laws are commonly more restrictive, the new Federalism did not necessarily relax requirements. It does, however, relieve the FTA from the majority of pre and post-award reviews to ensure compliance with federal standards.

Purpose of the guidelines

The federal guidelines identify when the FTA will involve itself in pre-award reviews of procurement, conditions, when it will review procurement processes, and when it will review bid protests and guidelines for the procurement process to ensure competitiveness.

To which agencies do the guidelines apply?

The guidelines place a varying level of FTA oversight over procurement depending on agency size and whether or not the state is the grantee and the transit agency is a subgrantee.

State Subgrantees. In cases where the State is the FTA grantee, the transit agency is a subgrantee of the State.[c] In these cases, the subgrantee must comply with state law and procurement procedures. In addition, the agency must comply with FTA's guidelines on competition and discrimination based on geographical location of the bidder. FTA guidelines on competition require that requirements placed on potential contractors not be too restrictive so as to decrease competition. Extensive pre-qualification requirements, for example, may be considered to be non-competitive.

FTA also specifically precludes preferential treatment of potential contractors based on their geographical location. Therefore, the agency may not discriminate against contractors from other jurisdictions

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[b] The purpose of this discussion of FTA guidelines is not to duplicate or interpret the complete text here. The purpose is to explain some of the important portions of the guidelines related to contracting for maintenance services. Many portions of the guidelines contain important contracting conceptions. A transit agency contemplating contracting should carefully review the current guidelines.

[c] Agencies that are funded through Section 18 of the Urban Mass Transportation Act of 1964, as amended, are subgrantees of the state. In this case, the state is the recipient and passes the funds through to the local agencies.

or from other states. This may conflict with recommended practices where agencies are encouraged to penalize contractors from other states in the contractor selection process.

FTA grantees with 100 or more vehicles. In cases where the agency is an FTA grantee (not a subgrantee of a state), and the agency operates a fleet of 100 or more vehicles, the agency must self-certify its procurement process. The only times FTA routinely involve itself in preaward reviews with a self-certified agency is during a non-competitive procurement (only one bidder) when the award is in excess of one-million dollars and when there are single bids involving the procurement of fourteen or more buses.

FTA grantees with fewer than 100 vehicles. FTA grantees with fewer than 100 vehicles may self-certify their procurement process but are not required to do so. FTA will only routinely perform preaward review for agencies that are not self-certified when a non-competitive procurement exceeds one-hundred thousand dollars.

Methods of procurement

The procurement process has its own jargon which will often vary in accordance with titles given to procurement actions in state or local laws and regulations. FTA, however, defines four methods of procurement and these methods of procurement generally have parallel methods of procurement under state and local laws and regulations.

Procurement by small purchase procedures. Small purchase procedures are relatively simple and informal. The current (1991) limit on small purchase agreements is $25,000. Most states and local agencies will have much lower limits. If small purchase procedures are used, price or rate quotes are obtained from a number of qualified sources and the services or materials are purchased. More formal procurement processes entail more administrative costs and delays. Higher administrative costs and delays may not be necessary when small sums are involved. For a discussion of small purchase agreements when buying maintenance services, see **Gray Box 1-15.**

Most small urban, rural and specialized transit systems that have no in-house maintenance capabilities and which utilize outside contractors for maintenance services, do so under small purchase agreements. Because the cost of most individual jobs is less than the small purchase limit, awards for each small job based informal quotes requires a minimum of administrative work. When the transit agency's vehicle requires a preventive inspection, for example, the vehicle can be sent to the local service garage and the agency is billed for the cost of the service. This is a small purchase agreement. Writing the specification for the same work and competitively awarding the same job through sealed bids or through competitive proposals would result in a tremendous overhead cost in comparison to the services being purchased.

The intent of a small purchase agreement is to avoid the high administrative costs of a competitive procurement for single purchases and not a series of similar purchases with the same or similar service provider. Maintenance services, where the transit agency purchases the same or similar services through a series of small purchase agreements, really does not conform to the intention of the small purchase procurement method.

1-15 The Use of Small Purchase Agreements for the Purchase of Routine Maintenance Services

Procurement by sealed bids (Competitive sealed bids) This method involves the open solicitation of firm-fixed-price bids for a service or materials.[d] A contract is awarded to the most responsive and responsible bidder conforming to the specification at the lowest total price. Many states and local governments have laws define the requirements for sealed bid procurement. Most states specify statutory requirements for advertising IFBs, including criteria for the selection of the winning bidder.

In many states and in local jurisdictions, the selection of the bidder does not necessarily have to be based solely on lowest initial bid price that conforms to the specifications of the invitation for bids. Purchasing agencies may consider evaluating bids based on the lowest total price or the life cycle cost associated with the purchase. An example of taking the total cost of service into consideration in the awarding of a maintenance contract is illustrated in **Gray Box 1-16**.

A community of 20,000 offers transit services to the community on a demand responsive basis and a modest amount of fixed route services in and around the central business district and the community's small college. Vehicles are currently being maintained by the city's public works department. The city wished to reduce the load on the public works vehicle maintenance shop and developed an invitation for bids to provide vehicle maintenance services for transit operations.

Several bids were received. The pricing of services was based on maintenance costs per mile of operation. The lowest cost per mile bid was from a truck lease and truck maintenance firm in a nearby community. The next lowest bidder was a local vehicle maintenance shop that specializes in repair of light duty trucks and automobiles and sells tires. Although discrimination against businesses based on geographical location is not permissible, a firm not located in the community (the low bidder) was in fact a higher cost option. The cost of travel to and from the firm in the nearby community made the total cost of services higher than those provided by a local business. The bid was awarded to the local business based on total costs.

1-16 Example of the Use of Total Cost In Selecting the Low Bidder

The federal circular also identifies three conditions under which it is applicable to use procurement using sealed bids. These include the following:

- A complete, adequate, and realistic specification or purchase description is available,
- Two or more responsible bidders are willing and able to compete effectively for the contract, and
- The procurement lends itself to a firm fixed-price contract and the selection so that the successful bidder can be determined on the basis of price.

Vehicle maintenance tends to be a process that is difficult to define in a complete specification (condition 1). The specific job to be performed generally depends upon the condition of the equipment, the priority of returning the equipment back to service, and upon the maintenance activity to be performed.

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[d] A firm fixed-price in this case does not refer to a fixed-price contract. A fixed-priced contract is one where only one price is quoted regardless of the level of service provided. Other ways of pricing contracts include hourly prices, unit cost (e.g., cost per preventive inspection), direct cost plus a fixed fee, and incentive-based pricing.

While teaching workshops on vehicle maintenance management over the last seven years, the senior author concluded his workshops by asking participants to identify criteria they would use to evaluate the proposals of potential maintenance contractors. Usually they will list qualifications of the mechanics, adequate facilities and maintenance equipment, financial stability of the contractor, experience with similar equipment, and ability to complete work in a timely manner. The service price is so much less important than the attributes of the service, that the participants almost always fail to include price in their list.

1-17 Illustration of the Importance of Price In Selecting A Maintenance Contractor

Equipment maintenance tends to be dynamic and not suited to description in a written specification. In the selection of a comprehensive maintenance service provider, there are many factors that are typically more important than price (condition 2). Such factors will include the qualifications of the mechanics, the financial stability of the firm, and the ability of the service provider to return vehicles in a timely manner (for an Illustration see **Gray Box 1-17**). It is seldom the case that purchasing of maintenance services is compatible with procurement by sealed bids.

Procurement by competitive proposal (competitive negotiation). The procurement of services is done through a request for proposals. The underlying rationale for using a request for proposals is there are characteristics other than price that are important and should be used to evaluate potential contractors.

More on the competitive proposal method of procuring services will be discussed later in this document. An important attribute of the competitive proposal method is, however, that the agency should identify criteria to be included in advance and publicize that it intends to use the specified criteria in the evaluation of proposals received. Examples of proposal selection criteria are illustrated in **Gray Box 1-18.** Potential bidders should be aware of proposal criteria at the time the request for proposals is advertised.

Procurement by noncompetitive negotiation (sole source contracting). This procurement method is generally permissible only in special cases (e.g., because of a lack of competition or where there is only one source for a needed service). Noncompetitive negotiation is usually used only when the competitive negotiation or competitive sealed bid has failed to attract competition. Because of easy entry into the automotive and truck repair business and the narrow profit margins of many existing firms, it is unlikely that adequate competition will be unavailable. Some will argue that in rural locations, it will be impossible to attract sufficient, and thus, meaningful, competition. Rural transit agencies, however, operate equipment with maintenance requirements similar to trucks and automobiles and even in scarcely populated rural locations there is competition between auto and truck repair services. **Gray Box 1-19** provides an illustration of sole source (non-competitive) contracting for maintenance services.

Selecting A Procurement Method

Figure 1-2 contains a decision tree to helps in identifying a method of procurement. The user simply needs to answer the questions in the boxes and the arrows will lead to a recommended method of procurement.

Purchase through competitive negotiation implies that there are characteristics other than price that should be taken into account in the awarding of contracts. The criteria listed below may be used to select the winning bidder for comprehensive maintenance services. The transit agency is in community of about 100,000 and provides both fixed route and demand responsive services. The agency wants the maintenance contractor to take over the agency's own maintenance facility.

The selection of a contractor is based on the evaluation of the proposal submitted based on the criteria below. Each proposal is judged by a member of an evaluation team and each team member awards the proposal a proportion of the points allotted to each category. The winning proposal is the one that receives a combined score closest to 100 points.

	Evaluation Criteria	Points
1.	Ability to provide comprehensive maintenance services at the transit agency's location within thirty days.	10
2.	Prior experience with bus maintenance	15
3.	Proposed scope of work (completeness)	15
4.	Training and experience of mechanics	10
5.	Prior experience in maintenance contracting	10
6.	Financial capabilities	10
7.	Ability to meet Disadvantage Business Enterprise (DBE) goals of the transit agency	10
8.	Results of the interview with the on site manager	10
9.	Price of the proposed services	10
	Total Points	100

1-18 Example Proposal Selection Criteria

A transit agency provides demand responsive services with 35 buses and vans. The agency conducted its own in-house maintenance, but because of poor quality services and an under-motivated workforce, management decided to have a contractor step in and assume maintenance responsibilities.

The agency solicited proposals from firms that were nationally known for contracting for maintenance services or national contract service firms. Only one of the companies solicited had a facility in the community, but the amount of work generated by the agency was not sufficient to warrant other potential contractors to establish a facility in the community. As a result, the transit agency received only one proposal.

Management concluded that the proposal was more than satisfactory. The proposing firm had an excellent track record. In fact, the price of the proposed services was estimated to be 16 percent below the estimated cost of the same service provided by the transit agency's own staff. After careful review of the transit agency's request for the award of a sole source contract, FTA allowed the agency to proceed with the contract based on only one proposal.

1-19 Example of Sole Source Maintenance Contracting

Cost and price analysis

As part of the award process, FTA requires the agency to conduct an independent estimate of price of services provided. The estimate should be conducted for the initial sealed bid or proposal and for all subsequent modifications of the contract. The agency should be very careful in evaluating the pricing mechanism for two reasons. The first is that maintenance is unlike most other similar service functions because the quality of maintenance work and the need to conduct maintenance work are difficult to evaluate. Diagnosing the exact cause of vehicle performance problems requires skill and may be time consuming. It may be less time consuming to simply replace parts. The replacement of unnecessary parts, however, may be wasteful and increase the overall cost of service. Under a contract priced through the contractors use of time and materials (i.e., parts and labor), the contractor may have an incentive to replace parts unnecessarily. Because of this, time and material pricing should be avoided whenever possible. Further, when using competitive negotiations to procure maintenance services, it may be beneficial to negotiate the price of parts and labor, and the contractor's profit separately. FTA requires that during non-competitive negotiation, the price of services and the contractor's profit are to be negotiated separately. **Gray Box 1-20** provides an example of separate negotiations of price and profit.

The transit agency should evaluate the price of services to make sure the costs are not unreasonably high or too low. A contractor that under-prices service may be more costly than one that prices services too high. Pricing services too low ("low-balling") for the contractor to make a reasonable profit may result in serious problems for the agency if the contractor cuts costs to diminish losses to improve meager profits. An example of the destructive nature of low-balling is illustrated in **Gray Box 1-21**.

Bonding requirements

It is common practice for agencies contracting for maintenance services to require bidders to purchase 1) a bid bond (or provide a certified check of equal value) at the time of bidding, 2) a performance bond, and 3) occasionally, a payment bond. The purpose of a bid bond is to protect the agency from a winning contractor that bids on services should it, following the contract award, decide not to execute the contract.[9] The bond is forfeit to the agency to compensate for added administrative costs associated with "re-awarding" the contract.

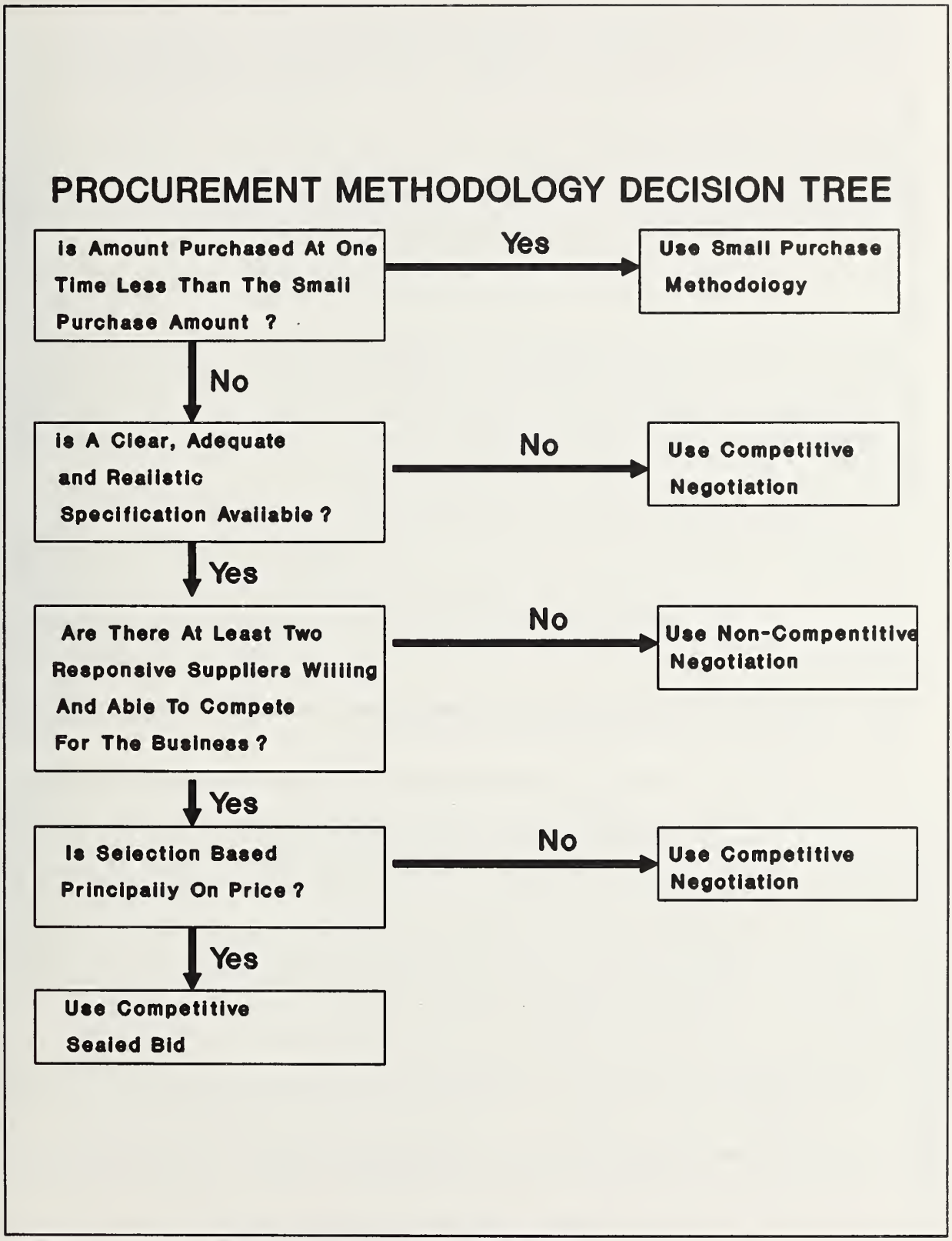

Figure 1-2 Procurement Methodology Decision Tree

An agency is contracting for comprehensive maintenance services within its own maintenance facility. The agency is planning to use pricing to accomplish several goals, including the following:

- The agency wants to provide the contractor with an incentive to innovate and improve efficiency.
- The agency does not want to provide the contractor with any incentive to perform maintenance functions that are unnecessary. The agency views pricing services based on time and materials (parts and labor) as an incentive to change parts that do not need changing.
- The agency wants to provide the contractor with a reasonable profit so that the contractor will remain financially viable and have financial resources to provide the agency with quality facilities, needed maintenance equipment, up-to-date for training mechanics and quality parts.

The agency selects a contractor through the competitive solicitation of proposals (an RFP). The winning contractor has proposed a ten percent profit on the cost of services. The remaining terms of the contract are to be negotiated. The first contract term to be negotiated is a reasonable cost budget excluding the contractor's profit. The contractor's profit is thus fixed to be ten percent of the cost budget. Regardless of the ultimate cost (assuming a cost over run) the contractor's profit is fixed. This significantly decreases the incentive to perform unneeded repairs.

The contractor is provided with an incentive to innovate by allowing it to keep half of any savings below the budgeted amount. If the costs exceed the budget, the contractor and the agency will split the overrun until the overrun reaches ten percent of the budget. Above ten percent over the budget, the contractor will assume the entire cost. To make sure the that the contractor does not decrease vehicle availability to diminish the maintenance budget, a cap is placed on the maximum time vehicles can be unavailable, averaged across the entire fleet.

1-20 An Illustration of Service Pricing Mechanisms

A contractor "low balled" a bid on comprehensive maintenance services on a fleet of vehicles. The contract was a three year contract with an option for renewal at the end of each year. After the initiation of services, the contractor began to realize the job would not be profitable if high quality maintenance services were conducted on the equipment.

The contractor began to cut corners and stopped performing any replacement of parts or units before ultimate failure. Instead of using Original Equipment Manufacturer or equivalent quality parts, the contractor began using lower quality parts. Fasteners (e.g., nuts, bolts, and washers) used for replacement were made from lower strength steel.

Ultimately, the agency terminated the contract. When the vehicles were returned to the agency, the maintenance contractor had managed to significantly diminish the quality of equipment. One of the agency's managers reported the contractor had turned the equipment into junk.

1-21 Illustration of the Need To Ensure That Contractor Earns An Adequate Profit

A performance bond is issued to ensure the agency that the contracted work will be completed.[10] A payment bond is issued to protect the agency from liens against the contractor's work.[11] While FTA discourages the use of bonding when contracting for services, a lien, for example, could be placed against the contractor for failure to pay a subcontractor or a vendor.

Many public agencies (including transit agencies) do require performance bonds of their contractors because it is either part of a charter or ordinance or common practice. It is not uncommon for cities to have municipal ordinances that require a performance bond for all contractors. If a city operates the transit system, the same rules would apply to vehicle maintenance contractors. FTA discourages the use of performance bonds because they may discourage competition by creating an impediment to potential bidders.

Options

FTA allows grantees to include options in the contract allowing the agency to renew or extend the contract past the stated ending date. Multiple year contracts and options to renew are common in contracting for maintenance services, particularly when a contractor has to absorb significant costs associated with establishing vehicle maintenance services. A contractor that takes over the control of the transit agency's garage, for example, is likely to assume significant costs associated with moving into the facilities, setting up management systems, hiring management and maintenance employees. The longer the duration of the contract or the greater the possibility for contract renewal, the greater opportunity the contractor has to spread start-up costs over a longer time period. In addition, longer contracting or renewal periods diminish start-up and bidding costs to be absorbed by the agency.

Lengthy contracts, on the other hand, discourage competition. The purpose of competitive contract awards is to encourage a high quality of services while keeping prices low. Rebidding services periodically encourages this kind of competition.

FTA will only permit a grantee to exercise options to extend a maintenance services contract for maximum a total of five years (basic contract plus option periods). An example of an agency exercising an

Space Coast Area Transit provides transit services throughout Brevard County, on the east coast of the Florida peninsula.* The agency first awarded a three year contract for maintenance services in 1987. Prior to contracting for maintenance services, maintenance was provided by the agency's own employees. The contractor reduced the cost of maintenance by roughly 20 percent.

When the basic three year contract was completed in 1990, the price of maintenance services had not escalated, and the agency was more than pleased with the contractor . The transit agency decided to exercise its option to extend the contract for another two years (five years in total) with no increase in the price of services. However, Space Coast Area Transit could include a small increase for each year in the future to adjust for inflation in the costs of doing business. Although in this case, an increase was unnecessary.

* Space Coast Area Transit is discussed in detail in Appendix B.

22 Illustration of Exercising Options To Extend a Contract

option is discussed in **Gray Box 1-22**. FTA will only permit grantees to exercise options when an analysis of the market or rebidding indicates that exercising an option to extend the contract is advantageous.

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CHAPTER 2
COMPETITIVE BIDDING, INVITATIONS FOR BIDS: REQUIREMENTS AND PITFALLS

An open and competitive process ensures both the efficient expenditure of public resource and the impartial and fair treatment of prospective contractors. Efficiency is stimulated through competition amongst qualified bidders that are bidding products and services meeting or exceeding the criteria identified in the specification. Impartial and fair treatment is guaranteed through the open solicitation of bidders and selecting a bid or bids based on objective criteria (usually, price). The objectives and benefits of competitive bidding were reaffirmed in a 1973 decision set forth by an Ohio Court,[1] which found competitive bidding provides all qualified bidders with an equal opportunity to bid on a contract.

Competitive bidding is also used to minimize or eliminate collusive behavior by promoting competition among bidders. This is the primary anti-competitive practice contractors may employee to increase their profits. Collusion is defined as "cooperation between competing sellers (in the form of an agreement, express or tacit, limiting competition, or a merger or other method of fusion) to raise the market price above the competitive price."[2] The opportunity for collusive pricing is reduced when bidding is open to all qualified bidders and contractors are selected through sealed bids. An example of collusive practices and an illustration of why competition reduces the incentive to collude is discussed in **Gray Box 2-1.**

By promoting competition among bidders, competitive bidding should help to save tax payers money. Open competition forces bidders to organize the most efficient system of service delivery in order to win the contract.

The Invitation For Bids (IFB)

Competitive sealed bidding (used in IFBs), is the most commonly used method for procuring services and supplies for public use. Negotiations with bidders after the receipt and opening of bids is **not** permitted in this procurement method. The award of the contract is to be made based **strictly** on the criteria set forth in the IFB (usually low bid). All bids meeting minimum required standards set forth in their published bidding documents must be accepted for consideration. It is important for transit agency managers to examine their state and local laws in order to determine the legal requirements and procurement procedures to be used for sealed competitive bidding. A listing of relevant state laws regulating competitive bidding are in Appendix A. Listed below are two situations where an IFB might not be considered the procurement method of choice:

Lack of competition. This will occur where there is insufficient interest in providing the services for "actual" competition to exist. There are two predominant conditions that may result in insufficient competition: These are: 1) stringent requirements where either the project is so large in magnitude that few contractors have the resources to accomplish the task; or where there are requirements for highly specialized facilities. In each case, the number of possible contractors would be limited, severely decreasing or eliminating competition. In yet another instance, 2) the transit system may be so remote that the sparseness of the automotive maintenance market would not support more than one contractor. Each of these conditions represents an extreme case and should be quite rare. In such cases, services should be purchased through a negotiated contract or through small purchase agreements rather than through the use of competitive sealed bids.

The IFB is the inappropriate procurement method. In cases where services cannot be adequately specified in an IFB or where there may be a variety of approaches to a problem, it may be wise to allow the contractor to propose a service specification. In fact, in most cases, allowing the contractor to propose services (i.e., through a Request For Proposals) is the preferred method for procuring maintenance services. The preference for use of an RFP is based on the ability of contractors to vary their delivery of services. An RFP also permits the agency to pay greater attention to quality in the selection of a maintenance contractor rather than basing selection solely on low bid price. Therefore, it is likely that use of a proposal, rather than a bid, is

The headquarters of a rural, county-wide transit system is located in a county seat community with a population of less than 2,500. The agricultural business base of the community is eroding. Local businesses are feeling the financial pinch of reduced business activity in the community.

The transit manager has always procured maintenance services through small purchase agreements. The manager would purchase maintenance services from one of the two automobile dealerships in town. He would select the dealership to take a vehicle requiring maintenance work based on:

- Matching the transit vehicle's chassis and engine manufacturer (most vehicles were constructed with bus bodies and van chassis and drive chains) with the automobile brands handled by the dealer.
- The dealerships ability to begin work on transit vehicles within a short period of time.
- Keeping the flow of work to each of the dealers roughly equal, so as to not show favoritism.

The State Department of Transportation's, Transit Planning Office encouraged transit managers within the state to conduct as many of their transactions as possible through competitive bidding. Based on this, the transit manager decided to competitively contract for all of the agency's vehicle maintenance. The agency developed a brief service specification and solicited bids for maintenance services within the local area.

The automotive dealers had always priced their services based on two factors, 1) an hourly labor rate, and 2) the retail cost of parts. Both dealerships used the same retail hourly rate for maintenance labor. Before the bid deadline, the two dealers met and agreed to both bid at their present hourly rate. Both of the dealers, however, needed the business and there was no guarantee that another maintenance service provider would not bid on the service. As a result, one of the dealers dropped his labor price by 30 percent while the other bid the original retail labor price as they had previously agreed to when the two dealers colluded on price.

By competitively bidding for maintenance services, the transit agency was the beneficiary of a 30 percent reduction in labor rates from the same automobile dealership with which it had always done business. Their attempt at collusion failed because of competition and the competitive nature of the automotive equipment maintenance service industry.

2-1 An Illustration of the Collusion and Difficulty of Enforcing Collusion in a Competitive Environment

the more efficient method for the selection of a maintenance contractor.[3] In practice, however, selection of contractors through sealed bids and the low bidder winning the contract is the most common approach.

The hidden costs of competitive bidding

The purpose of an IFB is to obtain the services specified at the lowest possible cost. Costs considered in deciding to competitively bid work, however, should go beyond those associated with the contractor's delivery of services - the bid price. All costs involved in the competitive bidding process must be considered, including the costs of the agency's bidding procedures, IFB and contract development, and administration of the contract. For a very small transit agency, for example, the total costs to the agency of conducting competitive bidding, including administrative costs, may be greater than the total cost of negotiating a series of small purchase agreements with an outside service provider. Thus the ultimate evaluation of competitive bidding costs

must also take into account administrative overhead incurred in the process of gaining the promised vehicle maintenance, as well as the costs of resolving any disputes emerging as a result of the contract. For a more lengthy discussion of administrative costs, see **Gray Box 2-2**.

Many small rural transit agencies argue that the administrative costs of competitively awarding a written contract are not compensated by the savings resulting from contracting for maintenance services. This has not been reflected in surveys of small transit agencies that contract for maintenance services.

Not surprisingly, very small transit operators associated with cities and counties tend to frequently contract for maintenance. This includes even those systems with as few as one or two vehicles. Cities and counties, on the other hand, have an administrative structure to offset the costs associated with initiating the contracting process. Most counties and cities already contract for several services, ranging from construction and maintenance services to hazardous materials disposal. These same contracting capabilities are used by cities and counties to competitively contract for maintenance services.

Transit operators that are branches of regional governments, members of public and private social services organizations, and other specialized transit service providers many not have a pre-existing administrative structure for contracting. In these cases, extremely small agencies without full-time management may find it difficult and time consuming to contract. In practice, however, small independent agencies with as few as five vehicles have realized cost savings through the use of competitively awarded contracts for maintenances services. These small agencies minimize their administrative costs by utilizing very short IFBs and one page contracts. They depend in large part on informal relationships with the contractor to conduct day-to-day business.

2-2 When Are Administrative Costs of Contracting Too Great to Make Competitive Bidding Inefficient?

Objectives of competitive bidding

The primary objective of competitive bidding is to make a fair determination as to which is the best, most competent, and/or lowest responsible and responsive bidder. In those states and local jurisdictions where the lowest bidder is to be awarded the contract, the courts have prohibited public officials from exercising their discretion so long as the minimum criteria of the specification are met. In many instances, however, laws of the state and the local jurisdiction (where applicable) allow for the consideration of criteria in addition to bid price when calculating the total contract cost for the bidder selection purposes. A maintenance contractor, for example, may be required to specify a downtime guarantee on vehicles. Greater downtime means higher costs for maintenance services. As such, it may be used in calculating the total cost of maintenance services when determining the winning bidder. Only the objectively measurable criteria set forth in the IFB should be applied in determining the lowest bidder.

Despite restrictive statutory language, there may be cases where the "quality" of the services in question may be considered.[4] Statutory provisions in the Iowa Code, for example, use less restrictive language and are not always strictly interpreted by the courts. Those statutory codes using "lowest and best" bidder, or "lowest responsive bidder" or "most competent" bidder generally permit transit agencies to use discretion so long as it is grounded in sound business judgment.

Criteria for calculating the total cost of a bid should not be confused with the minimum acceptable level of service provided by the contractor. If, for example, the bid specification indicates the contractor will provide heated storage space for the transit agency's vehicles, then the contractor must meet the storage requirement to be a qualified and responsive bidder. Even then, however, the agency may allow the contractor to identify such attributes as duration of guarantees on repairs, limits on vehicle downtime, provision of backup equipment, travel distances to the contractor's facility, and other attributes of services that impact total maintenance cost. These attributes may be included in calculating the total cost and must be identified in advance of bidding and the criteria must be known by prospective bidders.

If maintenance services are specified such that the only cost difference between potential contractors is the bid price, the task of determining the lowest responsible bidder merely involves comparing bids to determine which bid is lowest.

Impediments to the Competitive Bidding Process

The open and competitive bidding process is designed to be the most efficient method of purchasing resources. There are, however, many impediments that can serve as barriers to effective competition. Common impediments involve 1) anti-competitive practices on the part of suppliers, 2) unethical behavior of the purchasing agency (e.g., favoritism and extravagance), and 3) an insufficient number of potential contractors to provide meaningful competition.

Anti-competitive behavior

Competition forces the most efficient use of resources (equipment and labor) to produce goods and services. Through it, procurers of goods and services search for the lowest cost product that meets their quality standards, while potential contractors vie for a fair price for their services. Although the competitive framework is clearly an efficient system for organizing production, a competitive environment will generally result in the minimum profit a producer can earn. Therefore, to increase profits, producers may practice anti-competitive behavior.

Although there are several types of anti-competitive behavior, the most common is collusion. Collusion may take many forms but exists whenever competitors agree, either implicitly or explicitly, not to compete. **Gray Box 2-1** illustrated failed formal collusion. In this case, the colluding parties met and agreed not to compete. Collusion does not have to involve a formal agreement and can result from an informal implied agreement like the example discussed in **Gray Box 2-3**.

Another example of an anti-competitive practice where collusion is not involved is predatory pricing. This occurs when a supplier lowers its price below cost, thereby losing money. By lowering prices, the supplier hopes to capture a larger share of the market and, ultimately, drive competitors out-of-business. A competitor's failure to survive reduces competition and will eventually result in an increase in prices above competitive levels. In a market such as the vehicle maintenance sector, where there are many competitors, however, the occurrence of predatory pricing is unlikely.

Collusion is a serious violation of both state and federal antitrust laws. Although the ease of entry into the automotive servicing industry and the competition between providers should eliminate most opportunities for collusion, it can, nonetheless, occur. Common symptoms of collusive practices include:

- **Identical bids.** When bidders submit the same total price on services or the same price on a particular line item (e.g., the same price per labor hour). While this in itself does not indicate collusion, the agency should compare identical bids with present and past pricing policies of the bidders to determine if identical bids are simply a coincident.

A community, with a population of about 8,000, is the home of a regional transit system, providing demand responsive services in five rural counties. The transit system did not provide services within its home community because services were provided by the city's own urban system.

The regional transit system manager had always purchased maintenance through small purchase agreements from one maintenance contractor. This contractor also provided maintenance services to buses operated by the local school system, the city transit system, and a private charter bus service. The contractor views the maintenance performed for the school system and the charter service as the backbone of his business. Because each was so important to the contractor's business, it charged the school system and the charter operation competitive rates for maintenance services.

The two transit services had traditionally worked with the contractor because of the contractor's familiarity with buses. However, the contractor viewed the transit agencies as marginal business and charged them maintenance rates that were about the same as local retail rates for maintenance services.

The regional transit system manager felt he could achieve better prices if he competitively contracted for maintenance services. As a result, he developed a specification and solicited bids. Although there were several potential bidders, when it was time for the bid opening, only two bids were received. One was from a relatively new aggressive business and the other from the current contractor that bid its present rates. The new maintenance operator, who bid very competitive rates, won the contract.

The regional transit system manager felt other potential maintenance contractors did not bid because bus maintenance was seen to be the "turf" of one contractor and other businesses simply did not want to upset the status quo. Because there were two bids, however, this was an unsuccessful example of implicit collusion.

The next time the regional transit system solicited bids on maintenance, several bids were received, including one from an automobile dealer, a truck maintenance business, a truck leasing firm, and the original contractor specializing in bus maintenance. The manager felt the new business that had taken the contract away from the original maintenance contractor disrupted the "good-old-boy" network existing among the community's maintenance businesses.

2-3 An Example of Implicit Collusion

- **Rotated low bids.** This results when all bidders participating in a collusive scheme submit bids and by agreement, alternate as lowest bidder. Detecting this collusive practice requires the agency to review similar past procurements in which the same bidders have participated.

- **Group boycotts.** This results from an agreement among competitors not to bid on providing a particular service. Agreement not to bid may cause the competitive process to fail and cause the agency to revert to non-competitive purchase agreements.

Both federal and state laws prohibit collective bidder responses to an IFB in a way that directly or indirectly controls the price of services. Every solicitation received by the agency should contain a provision wherein the bidder certifies the price submitted was independently arrived at without collusion. When collusion or other anti-competitive practices are suspected among any bidders, a notice of the relevant facts of the situation must be transmitted to the state Attorney General (Section 3-702). If the transit agency suspects anti-

competitive bidding occurred, it is prudent to conduct a cost analysis when evaluating bids (more on this in the bid evaluation section of this chapter). The cost analysis will examine the cost of the components of service to ensure the bid selected reflects competitive pricing. In other words, the cost analysis will determine if the bid is as low as it should be in a normal competitive environment and not too low, indicating that a contractor "low-balled" the bid to "buy" the contract.

Ethics in contracting out for maintenance

Conflicts of interest are closely tied to ethics in the contracting process. It is, for example, a breach of ethical standards for any employee of the transit agency to participate in the maintenance service procurement process if they will benefit, indirectly or directly from the selection of a contractor. Such employees **must** disqualify themselves from participation in the procurement.

Many states have statutes regarding the conduct of public employees during the selection of contractors. A public employee who knowingly participates in the procurement process when a conflict of interest exists, may face criminal sanctions, resulting in voiding the contract.

Lack of competition

For competition to exist, two or more qualified bidders must compete to win the contract. There is a true lack of competition where it is technically or economically infeasible for more than one service contractor to provide competitive services. This may occur when the agency has specialized vehicles which require unique or costly repair equipment, where the agency is in a remote location that will only support one or no potential maintenance contractors, or where there are extensive resource requirements (e.g., a large facility or a large workforce) that limits the number of potential contractors with sufficient financial resources to qualify. This will not commonly be the case, especially for small to medium sized fleets, because of the widespread need for automotive service work and the low requirements for entry into the automotive maintenance industry.

Even though there is easy entry into the automotive service industry, it is not uncommon for transit agencies that contract for maintenance to receive only a few (one or two) bids. This is true for both small and large systems for different reasons.

Small transit systems. Small transit systems that operate vans or buses on truck or van chassis usually find an abundance of potential contractors, even in relatively small communities. The reason is that maintenance service providers' equipment has components similar to those in automobiles, vans and light duty trucks, and truck and automobile repair shops are available even in small communities. The contractor's administrative costs associated with bidding however, may be high relative to the income produced by a small fleet. Potential contractors are only likely to bid on work if they have a high probability of winning the contract. Therefore, it is not uncommon for a small operation to receive only one or two bidders. In many cases, the potential entry of other contractors will keep bids competitive. For an illustration of how potential competition can keep bids competitive, see **Gray Box 2-4.**

Large transit systems. Larger transit systems with purpose built buses are not likely to attract an abundance of bidders. This is partially because of the small number of transit systems that presently contract for maintenance services. Because providing contract maintenance services for larger fleets has significant fixed costs (costs for facilities and maintenance equipment), new entrants into the market are likely to arrive only when such contracting becomes more widespread.

If only one responsive bid is received in response to an IFB, local and state laws may prescribe a method the agency must use before it can award the bid to the sole bidder. In addition, for agencies that are grantees of FTA, sole source awards must meet FTA requirements (see pages on FTA guidelines). It is,

A fixed route transit system in a small community (population 6,000) was operated by a private company until the early 1970s when it became unprofitable. The city was faced with a dilemma. It could 1) subsidize the private operator, 2) allow the operator to abandon the service and curtail public transportation services altogether, or 3) it could operate the transit system as a municipal service. The city chose to subsidize the private operator.

The city and the private transit operator negotiated a profit level. Service was continued under this negotiated arrangement until the late 1970s. In 1979, another business contacted the city and expressed an interest in operating the transit system. The decision was made to competitively bid the contract for maintenance and route service. An invitation for bids was developed and advertised. Only the original private operator bid on the service. In fact, every time the contract has been rebid since the first bidding, only the original transit operator has bid on the services.

The price bid by the contractor has always been reasonable. In fact the first price bid was so low that the contractor had to plead with the City Council for a price increase. When asked why the contractor's bid was so low when there is an apparent lack of competition, the City's Public Works Director attributes it to implied competition. Although only one bid is received, several other potential contractors could conduct the work. Thus the contractor's highly competitive and relatively low bids have discouraged others from bidding on the services. The last time a bid for the service was let, the city was contacted by several maintenance shops, a firm that operates charter bus services, and one of the current contractor's own drivers. Although many prospective bidders have investigated past cost information on operating the system, only one bid has ever been received.

2-4 Example of Competition in Small Communities

however, recommended practice that before a single bid award is made that the agency consider the following:

Fairness of price bids. As part of competitive procurements, FTA requires the agency to conduct a "Cost and Price Analysis." This analysis is most crucial in the case of a sole source bidder and is required before awarding a non-competitive bid. The analysis should determine if the price submitted is fair and reasonable.

Were other bidders given the opportunity to bid? Since contracting for maintenance service by the transit industry is not widespread and transit vehicles comprise a relatively modest portion of the entire motor vehicle fleet, potential contractors may not view the local transit system as a likely source of business. It is, therefore, important to review efforts to publicize the IFB to confirm that potential bidders knew of the transit systems IFB.

Adequate time for resolicitation. The procurement process can take months. Statutory requirements for duration of advertising, requirements for board approval, and other barriers may make a quick resolicitation and award difficult. If the services are required, because of the time delays involved, resolicitation may not be an alternative.

If the price is fair and other bidders were given ample opportunity to bid on the work, then it may be advisable to accept the single bid. Otherwise, the bid may be rejected when it is in the best interests of the agency and new bids or offers may be solicited or the proposed procurement may be canceled. If, on the other hand, the agency determines in writing that the need for the services continues, but that the price of the sole source bid is not fair and reasonable and there is not time for resolicitation, or if resolicitation would be likely

to be futile, the procurement may then be conducted under "sole source procurement" (non-competitive negotiations) procedures according to state statutes and FTA rules.

Constructing an IFB

The construction of an IFB includes several stages. In practice, IFBs tend to vary in their level of detail ranging from lengthy documents with pages of technical language to simple one page descriptions of the service required and a simple bid form. Clearly, the two extremes have their place. The simpler the IFB and the more that is left to interpretation of the intent of the contracting parties (the transit agency and maintenance contractor), the more potential that exists for unwanted financial and legal liability. An example of the liability potential when an agency fails to spell-out the contractor's technical requirements and the agencies failure to monitor the contractor's compliance with their technical responsibilities, is discussed in **Gray Box 2-5.**

Environmental law generally views individuals responsible for environmental damage as "joint, and severally liable for cleanup costs."* This means all parties responsible for the damage must share in the cost of the clean-up. If toxic materials were created by the transit agency, even if the agency did not participate in their release into the environment, it is "jointly" responsible for the clean-up.

In illustration, a transit agency was using a local maintenance firm to perform all light duty maintenance. All heavy duty maintenance (i.e., rebuilding and overhauling) was conducted by another firm. The light duty maintenance contractor was taking all waste fluids from the transit agency's vehicles and dumping them on the lot adjacent to the site. After several years, the light duty maintenance firm terminated its business. Shortly following the firms closure, the firm's owner died.

Another firm was interested in purchasing the maintenance shop's site and conducted an environmental pre-purchase evaluation of the site. During evaluation, the dumping was discovered. The environmental damage was reported to the state environmental office. Ultimately, a large cleanup was initiated and the parties that used the facility were held jointly liable for the cleanup of the toxic materials that originated from their vehicles even thought they did not actually do the dumping. The transit agency's ultimate share of the liability for the cleanup was nearly $200,000.

* R.I. Steinzor, "Can Pollution Problems Send You to Jail?" Resource Recovery, June, 1989, pp. 24-25.

2-5 Example of the Need to Spell-out Contractor Responsibilities

Provisions or topic that should be covered in an IFB and ultimately in the contract are:

- **Terms of the contract.** Time of the contract, frequency of services, items included in the contract, payment provisions, and procedures for reimbursement.

- **Federal, State, and Local regulatory requirements.** Civil rights regulations, Davis-Bacon Act provisions and Disadvantage Business Enterprises provisions.

- **Service specifications.** This includes specification of the services and how they are measured (covered in Chapter 1). It should include defining how contractor performance standards will be measured.

- **Contractor records.** These are records the contractor should keep on all vehicles, including maintenance activities and instructions regarding the availability of records for auditing by the transit agency or other governmental offices.

- **Contract changes, arbitration and disputes.** This refers to how any changes to the contract, payment disputes, or services quality challenges will be arbitrated or rectified.

- **Non-performance.** This includes provisions for bid bonds, performance bonds, and liquidated damages.

- **Subcontracting.** Includes how many and which services the agency will permit the primary contractor to subcontract to other maintenance service contractors and under what conditions it may do so.

- **General protection.** This includes insurance requirements and hold harmless clauses.

- **Termination procedures.** This includes conditions under which termination of the contract will be permitted.

Pricing Mechanisms (terms)

Pricing mechanisms relate to how the contractor will be compensated for work completed. Many contractors are compensated based on time and material. More specifically, they are asked to bid a price per hour for labor (referenced to a qualification standard - "ASE Certified Automotive Mechanic") and a price for parts and materials (cost plus a specific percent). The pricing of services is quite important to an IFB because:

- it determines how a bidder is selected;

- it determines how the agency will measure and audit work accomplish; and

- it provides price incentives or disincentives to the contractor to be cost efficient, provide quality work, and to innovate service delivery.

The predominant pricing mechanisms are: 1) unit costs, 2) fixed prices (or flat rates), 3) hourly rates (or time and materials), and 4) direct costs plus fixed fees.[5]

Unit cost. A fixed unit cost contract provides the contractor with payments based on fixed units of input or output. A common unit of output for transit maintenance would be miles traveled and service is priced base on dollars per mile. Other units could be hours of service or trips.

Unit cost pricing does not provide for control over quality. In other words, the contractor is only rewarded for units of output and not for the reliability of the service. The agency will need to establish quality standards and carefully monitor the quality of services provided.

Pricing based on cost per mile has the positive impact of providing the contractor with an incentive to innovate and become more cost effective. When the contractor becomes more efficient, its profits increase. This works to the advantage of the agency so long as the agency has placed sufficient quality controls on maintenance services. In addition, it protects the contractor from cost overruns if vehicles are used more than the contractor anticipated - a difficulty that may be experienced with fixed-priced contracts. Unit cost pricing of

Pricing maintenance services on a per mile basis has positive aspects. It provides the maintenance contractor with the flexibility to design maintenance without becoming prescriptive. It also provides the contractor with the incentive to innovate and cut costs. On the other hand, pricing maintenance services based solely on cost per mile has two drawbacks for which the transit agency must design safeguards. These drawbacks are illustrated below.

- If the contractor is paid only for miles traveled, there is no incentive for it to improve the quality of maintenance. The contractor will receive the same rate per mile whether the vehicle is prone to failure or performs reliably. In fact, there is an incentive to provide the lowest cost per mile maintenance possible. Quality of maintenance can, however, be encouraged through the use of penalties or incentives for vehicle reliability. One common incentive is to require the maintenance contractor to provide backup vehicles at their own expense, and requiring the contractor to assume the cost of all towing and roadcall costs associated with a mechanical failure. This provides the contractor with an incentive to design a maintenance program that maximizes vehicle reliability. One contractor operating under such an incentive system has developed a preventive maintenance program that is so thorough that such items as water pumps, power steering pumps, and alternators are replaced in advance of failure to avoid roadcalls.

- Under a system where the contractor is only paid a price per mile for maintenance, the contractor must provide itself a price cushion to guard against the risk of a major failure. Suppose, for example, that during the current year an engine on a bus suffered a catastrophic failure, requiring its replacement. Depending on the size and type of the engine, replacement could cost several thousand dollars. To protect itself from the risk of having to incur such a cost during the contracting period (e.g., a one year contract), the contractor would have to place a significant price cushion on the cost per mile. Instead of having the contractor assume the cost of a catastrophic failure and adding a cushion to the price per mile, some transit agencies have made themselves financially responsible for drive line failures or for single repairs that exceed a specific dollar value (i.e., $1,000 for a single repair). Thus the transit agency bears the risk of a high cost failure and retains the risk over the entire life of the vehicle instead of the contractor having to cushion against the risk during a single contract period.

If the transit agency is very careful and provides proper safeguards, pricing on a per mile basis is an effective method for pricing services.

2-6 Unit Pricing Maintenance Services on a Per Mile Basis

maintenance services and examples are discussed in **Gray Box 2-6**.

Fixed price. A fixed-price contract simply identifies a dollar amount for services over the contracting period. This type of contracting is more common where the extent of services has been fairly well identified (such as a construction contract) or where the contractor knows what its work flow is likely to be and can control, to some extent, the work flow. Maintenance contracts, however, are not commonly priced using a fixed price for services during the contract period. The primary reason is the contractor and transit agency probably do not know the level of maintenance services that will be required. Occasionally, fixed price contracts are used. It is recommended however, that a fixed price contract should be used in conjunction with appropriate controls on quality of service or where a financial incentive, in addition to the fixed price, provides encouragement to provide quality maintenance services.

In general, fixed-price contracts have several disadvantages which generally make them undesirable. The first disadvantage is that the contractor can profit through reducing the cost of services. Thus it provides the contractor with an incentive to hold costs down rather than concentrating on service quality. Other disadvantages relate to the transit agency's need to accurately know in advance the quality and extent of maintenance services required.

Hourly rate pricing (time and materials). Most small transit systems contract for maintenance services with time and materials contracts. Maintenance labor is paid at an hour rate. Parts and materials are usual priced at cost plus a percentage (e.g., cost plus ten percent). Although this is common, it not desirable. Hourly rate pricing does not provide the maintenance contractor an incentive to perform efficiently and improve vehicle reliability. In fact, the contractor has the incentive to perform unnecessary repairs and make unneeded parts replacements. Pricing based on time and materials is nonetheless the simplest form of pricing.

Some agencies have been able to enforce quality under a time and materials pricing system by requiring the contractor to guarantee repairs and by reviewing all repairs to make sure the work was necessary and the contractor has not repeated previous work. One transit agency required the contractor to guarantee all repairs costing less than 300 dollars for three months and repairs costing more than 300 dollars for six months. The contract also required any dispute over repeat guarantee worked to be arbitrated by a mutually agreed upon independent party.

Direct cost plus a fixed fee pricing. This pricing mechanism allows the contractor to charge for all direct costs plus a fixed percentage. This type of pricing is common when purchasing fuel, parts, or other consumables. A contract for fuel, for example, may be priced at the cost per gallon of fuel delivered to the pump plus a fixed fee per gallon (e.g., ten cents per gallon). Direct cost plus a fixed fee pricing is uncommon for pricing complete maintenance services.

Because the contractor's risks are minimal under direct cost plus a fixed fee pricing, the fixed fee profit is a fairly low percentage. Some agencies are attracted to this method because it fixes the contractor's profit margin to a relatively low level. Because the contractor's costs and profit are covered, however, the contractor is given no incentive to improve services, or reduce costs. Unfortunately, it does provide the contractor with an incentive to conduct unnecessary repairs.

In addition to these four pricing techniques, contracts may include incentives. Basically, there are two types of incentives; those that are performance based and those that are cost based. Performance based incentives provide the contractor with a financial incentive for exceeding a specific level of performance. If the contractor exceeded a specific number of miles between roadcalls for mechanical reasons, the contractor would be paid a bonus. Cost incentives provide the contractor with a financial incentive for keeping costs below the estimated costs of services. Incentives may be paid using three basic methods:

- **One-Time Bonus.** With this method the contractor is simply paid a lump sum bonus for exceeding a certain performance or cost level. The maintenance contractor could, for example, be paid a bonus if maintenance costs were ten percent lower than the previous year's maintenance expenses.

- **Unit Rate** This method is based on paying the contractor a bonus based on the unit of output that exceeds a specific level of performance. Suppose, for example, the contractor is given a cash bonus for every month a vehicle has no roadcalls for mechanical reasons.

- **Incremental or Proportional Bonus** This method pays the contractor a bonus which increases with increased performance or increased cost savings. Suppose that a contractor is allowed to keep 50 percent of the difference between the fixed price bid and the direct costs as long as downtime objectives are met. In other words, the contractor's bonus is proportional to the level of savings.

Some contracts use disincentives rather then incentives to encourage positive contractor performance. A contractor could, for example, be assessed a penalty each time more than five percent of the fleet is down for maintenance. Like incentives, penalties may be assessed based on an one-time, unit rate, or incremental basis.

Exercise III

Exercise Objectives: To have the participants understand the appropriate application of each method for pricing of services.

Exercise Steps

1. For the agency identified in Exercise I, there are a myriad of services that can be procured from a maintenance contractor. They range from fueling service to comprehensive maintenance services. Given the range of services a transit agency could procure through a competitive contract, identify a service you would procure using each of the pricing methods identified below. Also discuss the pros and cons of other pricing methods.

- For which service might you chose to price using direct costs plus a fixed fee?_____

_____

- For which service might you chose to price using time and materials?_____

_____

- For which service might you chose to price using fixed price?_____

_____

- For which service might you chose to price using unit cost?_____

_____

2. Suppose you are purchasing comprehensive maintenance services that are priced based on unit cost (dollars per mile). In addition, you wish to provide the contractor with an incentive to improve performance. What performance measure would you use to under each of the following types of incentives?

- One time bonus._____

_____

_____

- Unit rate bonus._____

_____

_____

- Incremental or proportional bonus._____

_____

_____

Bid calculation form

The bid calculation form allows the contractor to price the services being bid. For this reason the bid calculation form is an essential part of an IFB. The nature of a bid calculation form depends a great deal on how the service is priced. Some IFBs, for example, will ask for price for maintenance per mile (unit cost pricing). In this case, the contractor will estimate its expected cost per mile. This may require several intermediate calculations, but only report the cost per mile when submitting the bid. Other contracts based on time and materials pricing generally require the contractor to fill-out more detailed bid calculation forms.

For large scale contracts, it is recommended when the bidder is asked for a simple single price supporting price information is requested.[a] Suppose, for example, the bidder is only asked to provide the agency with a cost per mile for maintenance. In addition, the transit agency should request that the bidder provide such information as hourly wage rates (including benefits) for mechanics, salaries levels, total proportion of the time managers will be devoted to the project, number of support personnel (i.e., secretaries, bookkeepers, and clerks) and the proportion of their time to be devoted to the project, sources of materials, supplies, and parts, subcontractors and their rates, rental on equipment and facilities related to the project, and other cost related information. Although once the contract begins the only cost the transit agency should be concerned with is the cost per mile, when evaluating a bid this information may be crucial to determining that the bid is fair and reasonable as part of FTA's required price and cost analysis (this was discussed in Chapter 1 and is simply a good contracting practice). The important aspect of collecting cost information is that the agency can collect sufficient cost data so the bid evaluation team can determine whether the lowest responsive bidder's bid is neither too high nor too low.

Gray Box 2-7 provides an example of a bid calculation form from a very detailed time and materials priced contract. The contractor is asked to bid prices of each service and the agency will use these bid prices to estimate the cost of all services for the entire year. The cost bid sheet calls for the contractor to specify a cost for rebuilding an engine. The transit agency does not know how many engines will need to be rebuilt within the next year but it does know that, on an average, two engines are being rebuilt each year. Therefore, when estimating the total cost of the contractor's bid, the transit agency will add in the cost of rebuilding two engines.

This agency estimates separately the annual cost of scheduled preventive maintenance and other maintenance (i.e., unscheduled preventive maintenance and corrective maintenance). The transit agency's preventive maintenance inspections are based on 3,000 mile intervals. Because the transit system will accumulate roughly one-half million miles, 168 preventive maintenance inspections will be required during the next year ($500{,}000 \div 3{,}000 \approx 168$). The agency works with a progressively more thorough inspection sequence where every 3,000 miles the least thorough inspection is performed, every 12,000 miles the next most thorough inspection is performed, and every 24,000 miles the most thorough inspection is performed. The activities included at each level are listed in **Gray Box 2-8**. Thus the transit agency expects to perform 112 - 3,000 mile inspections, 28 - 12,000 mile inspections, and 28 - 24,000 mile inspections ($112 + 28 + 28 = 168$ total inspections). The bid form asks the contractor to provide a bid for each level of preventive maintenance inspection and the transit agency can then estimate the annual cost of preventive maintenance inspections.

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[a] It is difficult to specify how large a contract must be before detailed cost data is requested. It would be clearly inappropriate to request such information from a local service station bidding on maintenance for a transit fleet of a half-a-dozen vehicles. A transit agency bidding a contract with an annual value of $100,000 or more on the other hand should, at a minimum, request average hourly wage rates for mechanics who will be working on vehicles.

Gray Box 2-9 contains a list of high use parts. The contractor is asked to specify the cost of these parts so the transit agency can add them to other cost items when estimating the annual costs associated with each contractor's bid.

The cost calculation for the estimated parts cost requires more analysis than other costs. In this example, the transit agency knows that in the past, parts for an entire year cost roughly $66,000. It also knows, from past invoices, the cost of the parts listed in **Gray Box 2-9**. If the bid by a potential contractor for the parts list in **Gray Box 2-9** is ten percent more than the cost of the same parts in past invoices, then the estimated costs of parts associated with this bid is $66,000 plus 10 percent times $66,000 ($66,000 + $66,000 x 0.10 = $72,600), or $72,600.

Others have evaluated the cost of parts and consumables (i.e., antifreeze, automatic transmission fluid, and engine oil) by asking potential contractors to list prices for a long list of parts (e.g., may be as many as 50 or 100) and then randomly selecting a sample of ten, high use parts. High use parts may include such items as oil and air filters, hoses, belts, brake blocks, and other items that are routinely replaced. The costs of the same sample of parts are extracted from each contractor's bid and the total of the ten is used as the relative cost of parts for each contractor.

This is a sample bid form taken from a urban system operating mostly demand responsive services in an urban area with a population of roughly 100,000. This system has purchased maintenance services from a maintenance service provider in the past, but without a competitively bid contract. Because the transit operator knows how many labor hours it purchased in the past and the labor classification utilized (i.e., mechanic, servicer, and parts handler), it has a good idea of the level of services it will require in the future. Based on passed experience, bidders are asked to fill-out the following form for prices of time and materials.

Example Bid Calculation Form

Bidder is to fill-in dollar amounts in spaces provided.

1. **Rent** - To include all buildings, equipment, facilities, utilities and services described in the service specification "Facilities and Maintenance Equipment Requirements" section.

   Rent Per Month $_____.

2. **Mechanic** - To inspect and start buses, 5:30 am to 8:00 am, Monday through Friday. Expected annual hours 254.

   2.5 hours per day times $_____ per hour equals $_____per day.

3. **Mechanic** - To provide routine and emergency maintenance 8:00 am to 5:00 pm, Monday through Friday. Expected annual hours 5,600.

   Mechanics Labor Rate $_____ per hour.

4. **Mechanic** - To make repairs, inspect and park buses when they return from service 6:00 pm to 8:30 pm Monday through Friday. Expected annual hours 635.

   2.5 hours per day times $_____ per hour equals $_____per day.

5. **Mechanic** - To inspect and start buses, perform repairs and provide roadcall services, 9:30 am to 7:30 pm, Saturdays. Expected annual hours 520.

   10 hours per Saturday times $_____per hour equals $_____per Saturday.

6. **Mechanic** - To service roadcalls, Monday through Friday. Expected eight service calls per year.

   Service roadcall mechanic labor rate $_____per hour.
   Towing service $_____per call.

7. **Fueling and servicing** - To fuel and service vehicles 6:00 pm to 8:30 pm, Monday through Friday. Expected annual hours 635.

   2.5 hours per day time $_____per hour equals $_____per day.

8. **Radio monitoring** - Individual with mechanical knowledge to monitor radio and advise drivers of actions to take when a mechanical problem occurs, 7:00 am to 6:00 pm Monday through Friday and 10:00 am to 6:00 pm. Saturday. Expected annual hours 2,588.

   Radio monitoring rate $_____per hour.

2-7 Example Bid Calculation Form

BID CALCULATION FORM CONTINUED

9. Office cleaning - Office space and driver break room cleaning. Expected annual hours 300.

Cost for office cleaning $_____per hour.

10. **Parts handling** - Inventory and handle parts at cost plus a fixed percentage mark-up. Average annual parts volume in the past $66,000.

Parts supplied at cost plus _____percent handling fee.

11. **Preventive maintenance** - Provide preventive maintenance inspections (PMIs) as defined in preventive maintenance guidelines (see **Gray Box 8**). Expected annual 3,000 mile PMIs - 112 per year; 12,000 mile PMIs - 28 per year; 24,000 mile PMIs - 28 per year.

3,000 mile PMI $_____per inspection.
12,000 mile PMI $_____per inspection.
24,000 mile PMI $_____per inspection.

12. **Major component rebuilding** - To provide an estimate of the cost of rebuilding major components, provide a cost for rebuilding an engine and transmission with repairs fully guaranteed for one year under normal use. Expected 2 engine rebuilds per year and expected 4 transmission.

Rebuild a 6V-53T Engine $_____.
Rebuild a MT 643 Transmission $_____.

13. **Parts cost** - The total price for the representative parts list in **Gray Box 9**.

Sample parts cost total $_____.

14. **Management** - Identify the person that will be responsible for managing contracted services and the day-to-day mechanical supervisor for the contracting period. Attach a resume including relevant work experience.

Manager _____.
Supervisor _____.

15. **Mechanics** - Identify the mechanics that will work on transit agency's vehicles and attach a resume for each identifying their relevant work experience, training and certifications.

Mechanic _____.
Mechanic _____.
Mechanic _____.
Mechanic _____.
Mechanic _____.
Mechanic _____.

16. **Additional information** - Attach any additional information relevant to this bid.

2-7 Example Bid Calculation Form Continued

3,000 PREVENTIVE MAINTENANCE INSPECTION ELEMENTS

Exterior

1. Check and replace if necessary head lights, turn signal lights, 4-way flashers, brake lights, back-up lights, destination sign and lights, and boarding lights.
2. Body, paint and bumper - inspect for appearance, loose body parts, and accident damage.
3. Check and replace, if necessary, windshield wiper blades and check windshield washer.
4. Inspect tires for unusual wear, cuts, seals, front wheel grease level, torque lug nuts, and check pressure.
5. Inspect rear and front door hinges and door motion - lubricate and adjust if necessary.
6. Check windows - clean window tracks and lubricate.
7. Check outside mirrors - adjust and tighten as necessary.
8. Check and clean batteries and battery cables/terminals.

Engine and Drive Train

1. Inspect for fuel, oil, and exhaust leaks - inspect and adjust if necessary.
2. Inspect hoses and lines for signs of wear, leaks, and poor connections.
3. Inspect radiator for leaks, coolant level, and pressure test.
4. Inspect shutterstat for operation.
5. Inspect all belts for condition and adjust.
6. Inspect and adjust electrical connections on alternator and starter.
7. Inspect power steering pump and fluid level.
8. Change exterior transportation filter and check transmission fluid and level.
9. Change engine oil, oil filters, and all fuel and water filters.

Under Vehicle

1. Check and adjust tie rods, king pins, control arms, and steering linkages.
2. Check brake linings and adjust.
3. Drain air tanks, check air lines, air bags, and leveler valve.
4. Check differential fluid level.
5. Grease all zerk fittings.
6. Check exhaust pipes, clamps, muffler strap, and exhaust systems for leaks.
7. Check suspension members - shocks, bushing, mounts, and sway bars.
8. Check frame for signs of fatigue or cracks.
9. Check power steering control valve and power steering pump.
10. Check wiring to rear lights for unusual wear.
11. Check mud flap brackets.
12. Check engine mounts for looseness and wear.
13. Inspect transmission and engine for signs of leaks.

Interior Inspection

1. Check the dashlights, gauges, and switches for operation.
2. Check driver seat and belt.
3. Check parking brake, air brake, accelerator, accelerator interlock operation and condition, and light dimmer switch operation.
4. Check shifting mechanism.
5. Check operation of windshield wipers and windshield washers.
6. Check and adjust driver's security shield.

2-8 Elements Included in Preventive Maintenance Inspection

3,000 MILE PREVENTIVE MAINTENANCE INSPECTION ELEMENTS CONTINUED

INTERIOR INSPECTION CONTINUED

7. Check interior lights, destination sign display and lights, and rear door lights.
8. Check door operation and rear door interlock.
9. Check radio mounting and information rack mountings.
10. Check engine alarm for operation.
11. Check first aid kit contents and fire extinguisher for adequate pressure.
12. Check seats for cuts or marks in upholstery.
13. Check interior mirrors and tighten if necessary.
14. Inspect stantions, and hand and grab rail.
15. Inspect the floor and stepwell coverings.

Road Test

1. Check upshifting and downshifting, steering, brake operation, and general operation of bus.

12,000 MILE PREVENTIVE MAINTENANCE INSPECTION ELEMENTS

Conduct all the 3,000 Mile PMI Elements Plus

1. Torque transmission bell housing bolts.
2. Change transmission filter, fluid and breather cap.
3. Add shutterstat fluid.
4. Change power steering reservoir fluid.

24,000 MILE PREVENTIVE MAINTENANCE INSPECTION ELEMENTS

Conduct al the 3,000 and 12,000 Mile PMI Elements Plus

1. Torque all suspension bolts.
2. Measure the height of air bellows.
3. Change differential fluid level.

2-8 Elements Included in Preventive Maintenance Inspection

SAMPLE PARTS LIST

	Part*	Unit Cost
1.	P1146 Fram Filter	$_____
2.	P1147 Fram Filter	$_____
3.	PH3612 Fram Filter	$_____
4.	PR3413 Fram Filter	$_____
5.	PH3519 Fram Filter	$_____
6.	FT 1051 Fram Filter	$_____
7.	C1720 Fram Filter	$_____
8.	101900 Bendix Filter	$_____
9.	One Quart 30 W Rotella Oil	$_____
10.	8-D Battery	$_____
11.	3030PB Anchorlok Brake Pot	$_____
12.	4644 ADX Abex Brake Lining	$_____
13.	4644 Brake Clinic Brake Shoe	$_____
14.	Rebuilt Alternator Model 85C2007	$_____
15.	Rebuilt Starter Model 1114927	$_____
16.	208974 Murray Rear Heater Motor	$_____
17.	M0868 Everco Front Heater Motor	$_____
18.	KYS 185 Kysor Shutterstat	$_____
19.	KYS 195 Kysor Shutterstat	$_____
20.	4000 Wagner Headlamp	$_____
21.	8543201 KD Light Assembly	$_____
22.	0859751 BlueBird Circulating Pump	$_____
23.	2126936 BlueBird Power Steering Kit	$_____
24.	2120848 BlueBird Steering Seal Kit	$_____
25.	1101203 BlueBird Torque Beam	$_____
26.	0877723 BlueBird Carbon Trap	$_____
27.	1129428 BlueBird Assist Cylinder	$_____
28.	1010 Weldon Lamp Assembly	$_____
29.	15425 Dayco Belt	$_____
30.	1077221 BlueBird Torque Beam Nut	$_____
	TOTAL	$_____

* Price quote will be for the part and manufacturer identified or approved equivalent.

2-9 Sample Parts Costs

The IFB bid form should include space for the bidder to identify its company, the address of the company, the individual responsible for the bid, and a signature. This signature should signify that the bidder offers to provide the services identified in the bid specification, that the bid was developed independently of consultation with other bidders, and that the offer remains in effect for a specific period (usually 60 to 90 days). This information could be indicated by having the bidder sign under the following clause:

> The bidder certifies that he (or she) has read, understands, and will fully and faithfully comply with this invitation for bid, its attachments and any reference documents. The bidder also certifies, that the prices offered were independently developed without consultation.[6]

The bid form should also include clear instructions for filling out the form and terms and conditions regarding the acceptance of a bid.

Bid forms may (and in most cases they should) also request several other types of information. These are discussed in the following paragraphs.

If the bidder is required to provide a bid bond or security deposit, space that indicates the amount and conditions of the bond or deposit and instructions on how the bond (or deposit) is to be received by the transit agency (i.e., attached to bid, or deposited with the agency's financial manager). The bid form should also indicate when the bidders bid bond or deposit will be returned - usually upon execution of a contract (bid bonds are discussed in more detail later).

If the bidder is required to provide a performance bond or security bond, the conditions and terms for the bond or security should be identified (performance bonds are discussed in more detail later). The IFB should contain several clauses, they include:

- A statement to the effect that the bid will become a contract upon acceptance by the transit agency, or that a contract will be provided later to the successful bidder.

- A statement regarding the qualifications of the contractor and the contractor's physical facility, e.g., stating that the contract will not be executed until the transit agency performs a complete inspection of the contractor's facilities to guarantee they meet the requirements of the contract specification. Items inspected may include the number and capacity of lifts, the qualifications of mechanics, or the size of the parking facility.

- A statement asking for a brief description of the organization, asking the contractor to identify the status of the organization for taxing purposes to include[7]:

  - For-profit corporation or joint venture corporation
  - For-profit partnership or sole proprietorship
  - Non-profit corporation
  - Public agency
  - Other (identify)

- A statement asking the contractor to identify if it is a Minority Business or a Small Business.

- A statement asking the contractor to identify any subcontractors, what functions the subcontractors would perform, and their status with regards to taxing purposes, and minority or small business status.

- A statement asking the contractor to identify bank credit references or other financial institutions. In many cases, the best financial status check of a potential contractor can be made by contacting suppliers

to determine if the contractor has paid bills promptly. The transit agency may ask for three commonly used material or parts suppliers.

- A statement asking the contractor if any litigation is pending against the respondent, or any other company officers or partners of the respondent. If there is any litigation, then the contractor should be asked to briefly describe details of the case.

- A statement asking the contractor to identify agencies or firms for which it provides similar services (a maximum of three) and names of contacts with each.

Federal, State, and Local Regulatory Requirements

Most of the transit agency's basic regulatory requirements are passed along to the contractor. In the case of contracting where the agency is a Federal Transit Administration (FTA) grantee and FTA funds are involved, the contractor must follow federal and FTA regulations on the procurement of services. In cases where the grantee is the state and the transit agency is the subgrantee, the transit agency must follow the guidelines of the state. State's guidelines are likely to be required to pass the federal requirements.

FTA grantees must meet appropriate state and local regulations. State regulations may not conflict with federal requirements. The rule of thumb is that federal requirements should be viewed as setting the basic minimum legal obligations of the transit agency. FTA funded projects, for example, require grantees to provide for equal opportunity in employment. They must also achieve a minimum Disadvantaged Business Enterprises goal of 10 percent.[8]

Federal regulations (as well as state and local regulations) applicable to the purchase of maintenance services should be identified in the IFB and later included in the contract. There are several standard provisions that must be in Federal contracts, but not all provisions must be part of all types of contracts. Certain provisions only apply to construction contracts and not to services contracts. A list of provisions, by title, is included in **Gray Box 2-10**. Many transit systems choose to include all provisions in all contracts. Transit agencies include Buy American provision, which applies to contracts involving the purchase of steel, cement, and manufacturing products, in their contracts for services. Federal regulations most applicable to maintenance contractors follow.[9]

Remedies for breach of contract

All contracts are required to state "condition stipulating remedies" if the contractor fails to meet the terms of the contract. These stipulations can allow for administrative, contractual, or legal remedies, and are intended to provide appropriate sanctions. Contracts may include liquidated damages provisions requiring the contractor to pay penalties for damages suffered by the contractor's failure to meet the terms of the contract (more on liquidated damages later in this chapter) or to forfeit part or all of a performance bond. Other forms of sanctions may include withholding payments, suspending or terminating the contract, or withholding other awards to the contractor.

Termination

All contracts for more than $10,000 are to include provisions that allow the agency to terminate the contract for two reasons - terminate for default and termination for convenience. Default simply means the contractor failed to meet the requirements of the contract. An example clause for termination due to default taken from a model document states:[10]

Provision Title*	Applicability
Remedies for breach of contract	All contracts other than small purchase agreements
Termination	All contracts greater than $10,000
Equal employment opportunity	All contracts greater than $10,000
Copeland Anti-Kickback	All construction or facility repair contracts
Davis-Bacon Act	All construction contracts greater than $2,000
Contract Work Hours and Safety Standards Act	Construction contracts greater than $2,000. All other contracts greater than $2,000 where mechanics or laborers are employed.
Discovery and invention/patent rights	All contracts involving research, development, experimental, or demonstration efforts.
Access to Records	All negotiated contracts (except those made with small purchase procedures).
Clean Air and Water Acts	All contracts greater than $100,000.
Energy Efficiency	All contracts
Minority Business Enterprise	All contracts
Cargo Preference	All contracts involving ocean transportation
Bonding	All construction contracts over $100,000
Buy America	All projects involving the use of steel, cement, and manufactured products
Rolling Stock	All contracts involving the purchase of rolling stock
Interests in Members of Congress**	All contracts
Americans With Disabilities	All contracts

* This list, with the exception of the last item, was derived directly from "Transit Procurement Training Based On: Orientation to Third-Party Contracting: A Seminar for UMTA Grantees," TCI, Inc., Washington, D.C., n.d.

** "Third Party Contracting Guidelines," UMTA Circular 4220.1B, February 5, 1990, Attachment A.

2-10 Federal Contract Provision Requirements

"(Agency Name) reserves the right to cancel any contract resulting from this procurement for cause by written notice to the contractor. Cause for cancellation will be documented failure(s) of the contractor to provide services in the quantity and/or quality required. Notice of such cancellation will be given with sufficient time (i.e., number of days) to allow for the orderly withdrawal of the contractor without additional harm to the participants or (Agency Name). Cancellation with documented cause shall include forfeiture of all or part of the performance bond to compensate for the damage created by failure to complete the contract."

Termination for convenience relates to the termination or partial termination of a contract because the contractor, for good reasons beyond its control, is not meeting the conditions of the contract. The contractor may be allowed to proceed with a portion of the contract or the contract may be terminated and the contractor paid for all reasonable closeout costs. An example taken from a model document states:[10]

"(Agency Name) may terminate any contract resulting from this procurement, in whole or part, whenever it determines that termination is in the best interest of the (agency). Any termination shall be affected by delivering to the Contractor a notice of termination specifying the extent to which performance under the contract is terminated, and the date upon which termination becomes effective.

In the event of any termination, (Agency Name) shall pay the agreed rate only for services delivered up to the date of termination. After the date of termination the (Agency Name) has no obligation of any kind to the Contractor. The Contractor shall deliver all records, equipment and materials to (Agency Name) within 24 hours of the date of termination."

Equal employment opportunity

All contracts greater than $10,000 must include a clause requiring the contractor to take positive action to insure that persons employed or seeking employment are treated equally regardless of their race, religion, color, sex, or national origin. Federal guidelines also require that contractors place notice of their equal employment opportunity responsibility in conspicuous locations within the worksite. Failure to comply with equal employment opportunity requirements will not only result in the termination of a contract but also in making the contractor ineligible for future contracts. This requirement should be stated in both the IFB and in the contract. An example of this provision taken from a model document states:[11]

No respondent to this request shall in any way, directly or indirectly, discriminate against any person because of age, race, color, handicap, sex, national origin, or religious creed.

Contract work hours and safety act

The contractor's mechanics and laborers must be paid on a standard eight hour, forty hour work week. Any time beyond an eight hour day must be compensated at a rate not less then one and one-half times the base, eight-hour rate. In addition, mechanics or laborers must not be required to work in surroundings or under conditions that are unsanitary, hazardous, or dangerous as determined by U.S. Department of Labor standards and reported in 29 CFR Part 1926. Clauses in contracts stating this provision often become cumbersome by restating portions of the Act. It is simply adequate to state this provision in straight forward terms such as the description above.

Access to records

All contracts not entered into through competitive bidding must have a provision stipulating auditing requirements. In other words, this does not apply to contracts solicited through an IFB but does apply to

contracts solicited through a request for proposals (RFP). RFPs will be discussed in the next chapter. This provision requires that the transit agency, FTA, the Comptroller General, or any authorized agent of the transit agency, FTA, or the Comptroller General must be able to audit the contractor's books, documents, papers, and records related to the contract up to three years after the contract has been closed-out.

Clean Air Act/Clean Water Act

All contracts greater than $100,000 must include a provision requiring the contractor to comply with Section 508 of the Clean Water Act and Section 306 of the Clean Air Act. An example of this provision taken from a model document states:[12]

> In connection with the performance of this contract, the Contractor shall comply with the requirements of Section 508 of the Clean Water Act and Section 306 of the Clean Air Act. These regulations prohibit the use of facilities included in the EPA "List of Violating Facilities" under non-exempt federal contracts. In addition, these provisions require the reporting of any violations to FTA and to the EPA.

Energy efficiency

The contractor is required to recognize the mandatory standards and policies relating to energy efficiency contained in the respective State Energy Conservation Plan issued in compliance with the Energy Policy and Conservation Act (42 USC Section et seq). This provision can be identified by simply stating the provision as it was above.

Disadvantaged business enterprises

In 1986, in Fullilove v. Klutznick, the United States Supreme Court confronted the constitutionality of the minority quota issue. The Court firmly established the legitimacy of affirmative action by upholding a provision of a federal public works employment program that set aside 10 percent of its total funds for minority business enterprises (MBEs). The Court concluded that Congress had the power to regulate the practices of prime contractors on federally funded projects. There was a rational basis for Congress to conclude that the subcontracting practices of prime contractors (this will include transit agencies doing business with third party independent maintenance contractors) could perpetuate the prevailing impaired access by minority businesses even if those prime contractors were not directly responsible for any violation of anti-discrimination laws. The Supreme Court ruled that Congress was free to impose this burden based on the assumption that in the past, some non-minority businesses have reaped competitive benefits from minority firm contracting opportunities.

The requirements for contracting with disadvantaged business enterprises (DBE) are established in Section 105(f) of the Surface Transportation Assistance Act of 1982 and 49 CFR Part 23. It states any recipient of FTA funds must have an overall goal of spending ten percent or more, of the total annual funds received from U.S. DOT assisted contracts, with small business concerns owned and controlled by socially and economically disadvantaged individuals.[13]

To qualify as a DBE, the contractor must be a small business concern. Fifty-one percent of the business must be owned by one or more individuals from a socially or economically disadvantaged population segment and daily operation must be under their control. The transit agency may also pass through the same goals to its contractor in the selection of subcontractors. A simple example of a disadvantage business enterprise clause in the IFB could state:

"The transit agency has set as its DBE goal at 10 percent (use 10 percent or a higher goal) for this project. Bidders must demonstrate how they will meet this goal or why they could not, in accordance with current FTA regulations."[b]

Additional Clauses

Maintenance service IFBs should contain a number of additional requirements beyond the specification of maintenance and those required by federal, state and local law. Many of the clauses included in the IFB will depend on local practices. Some that should be contained in the IFB and the contract should include:

Insurance requirements. The maintenance contractor should be required to carry adequate insurance to cover general vehicle accident liability resulting from work performed by the contractor that results in property damage or personal injury, and liability insurance for the contractor's vehicles (i.e., tow truck that may be used in conjunction with work for the transit agency). Other insurance requirements may be related to requiring workman's compensation to meet local statutes and insurance on the maintenance facility to include insuring any transit vehicles housed at the facility.

Alternatively fueled vehicles. Alternative fueled vehicles have very different maintenance and fueling handling requirements. At a minimum, all facilities where alternative fueled vehicles are maintained will have more extensive ventilation requirements (more on alternatively fueled vehicle maintenance requirements are included in Appendix C). The IFB may, however, state that the contractor must take certain safety precautions and that the contractor must show that mechanics working on vehicles have had special fuel specific, safety training, or that a safety training session will be provided. Such a program must be identified in the bid documents.

Disposal of vehicle waste

Environmental law, in general, provides for shared "cradle to grave" responsibilities for hazardous wastes among all the parties involved in the creation of a hazardous waste, the storage of hazardous waste, the transportation of hazardous waste, and the disposal of hazardous waste. In addition, the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), hold all parties jointly and severally liable. This simply means that "any single responsible person may be required to pay the entire cost of clean-up, regardless of whether other parties may also be held liable."[14] If the contractor ceased to exist (through bankruptcy), the maintenance contractor's clients may be held liable for environmental damage done by the contractor's improper disposal. Further, given the number of hazardous materials defined by the Environmental Protection Agency expanded from 14 toxic substances to 39 on March 26, 1991, the probability of a hazardous spill has increased.[15]

Under the law, when a contractor causes hazardous materials to be released into the environment, the patron (the transit agency) of a third party (the contractor) has only three defenses. They are, 1) the release was caused by an act of God, 2) the release was caused by an act of war, or 3) the patron can show that it exercised due care and took precautions to ensure the release would not occur and could not be foreseen. Clearly, in order for the transit agency to protect itself it must ensure the contractor is taking adequate precautions in disposal. In addition, the transit agency can not be held harmless (not responsible for releases)

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[b] In late 1991, however, President Bush, in his signing of the new Civil Rights Act, indicated that he wanted to see minority quotas phased out as soon as possible.

through a hold harmless clause (indemnification) in the contract. Therefore, while there is no way to escape liability, taking sound precautions can minimize the agency's liability.

A simple clause in the IFB such as the following would serve to show precautions were being taken: "The Contractor will dispose of all wastes in conformance with the Resource Conservation and Recovery Act as amended. Before the contract is initiated, the Contractor must provide the transit agency a written plan for the disposal of wastes including the storage, transportation, treatment, and disposal of wastes. Any deviation from the plan will require written consent of the transit agency."

Rejection of bids

To protect itself when it enters into a contract that is undesirable but meets the selection criteria, the IFB should include a clause giving the transit agency the right to reject all bids. This clause may read: "The transit agency reserves the right to accept or reject any or all of the bids submitted. Upon further analysis of need and analysis of costs resulting from the responses to this IFB, the transit agency reserves the right to award or reject any portions of the described services."

Hold harmless clauses

Most contracts include a hold harmless clause. As was seen in the case of environmental law, however, the transit agency cannot transfer liability to the contractor through a hold harmless clause. In general, the transit agency is responsible and liable for the actions of its third party contractor. The only way to reduce agency liability is to ensure the contractor takes adequate precautions and follows standards and regulations. In addition, the degree to which an agency can be indemnified (held harmless) by such a clause in the contract often depends on the laws or legal precedent at the state level and, in the case of a public agency, the State Tort Claims Acts' procedures. An example of a hold harmless clause taken from a model document is presented below.[16]

> "The Contractor agrees to protect, defend, indemnify and hold (Agency Name), its officers, employees and agents free and harmless from any and all losses, penalties, damages, settlements, costs, charges, professional fees, or other expenses or liabilities of every kind and character arising our of or relating to any and all claims, liens, demands, obligations, actions, proceedings, or causes of action of every kind and character in connection with or arising directly or indirectly out of this agreement and/or performance hereof. Without limiting the generality of the foregoing, any and all such claims related to personal injury, infringement of any patent, trademark, copyright (or application for any thereof) or of any other tangible or intangible personal or property right, or actual or alleged violation of any other tangible or intangible personal or property right, or actual or alleged violation of any applicable statute, ordinance, administrative order, rule or regulations, or decree of any court, shall be included in the indemnity hereunder. The Contractor further agrees to investigate, handle, respond to, provide defense for, and defend any such claims at its sole expense, including claims related to accidents and injuries resulting from poor vehicle maintenance, and agrees to bear all other costs and expenses related thereto, even if such claim is groundless, false or fraudulent."

Bid protest procedures

FTA grantees must have a formal written policy for dealing with bid protests.[17] FTA only becomes involved in bid protests when the protester alleges that the grantee does not have proper protest procedures or that the process was not followed. These protest procedures should either be included in the IFB or referenced with instructions on how to acquire a copy.

Bidder selection procedures

The IFB should identify how the contractor will be selected, particularly if the selection procedures are based on any criteria other than lowest responsive bid. If the bid selection criteria are based on total costs and not just the costs of the direct service, for example, the IFB should identify how total costs will be calculated.

Preferences

Many states and localities require that procurement preferences be given to suppliers within the state, county or city. Geographical preferences are strictly forbidden by FTA.[18] This does not preempt state licensing laws. States may require maintenance shops to be licensed in their states to operate. A qualification to bid may be that the contractor is licensed in the transit agency's state. Preferences based solely on geographical location, however, are forbidden.

Other topics that clauses may deal with include:

- Confidentiality of bid information.
- Accuracy of the bid and how inaccurate information will be handled.
- Options for renewal of the contract.
- Dealing with late bids, modifications to bids, and bid withdrawals.
- Discontinuation or reduction in services procured due to a lack of funds.
- Limiting the contractor's ability to transfer the contract to another party.
- Requirements and limits on subcontracting.
- Assigning responsibility to the contractor for procuring all necessary licenses, permits, and for paying all incidental taxes.

Contractor Accountability Mechanisms - Liquidated Damages and Bonds

The transit agency has several mechanisms to force contractor accountability. In other words, if a contractor fails to perform within the specification and terms of the contract, the transit agency may acquire financial relief for damages through bid bonds or liquidated damages.

Liquidated damages. The purpose of liquidated damages requirements is to provide the agency relief for delinquent or untimely delivery of services or goods. Liquidated damage requirements are most commonly used when a contract is let for the manufacture and delivery of equipment (e.g., buses). A bus manufacturer may, for example, be assessed liquidated damages for every day new buses are delivered past a prescribed deadline. In the case of delinquent equipment, the true damages for late delivery would be difficult to determine. Thus a prescribed penalty is identified.

In the case of contracting for maintenance services, liquidated damage clauses may be included in the contract. They are, however, seldom exercised. The reason for this is that the contractor that cannot deliver services on-time is probably having financial or other difficulties and assessing a liquidated damages claim will

only aggravate the situation. In most cases, the need for a liquidated damages clause can be alleviated by requiring the contractor to provide backup equipment, at no cost to the agency, when vehicles are unavailable. Another way of achieving the same result is to provide the contractor with an incentive for timely performance, or to assess a penalty for not meeting scheduled requirements.

Bid bonds. The purpose of the bid bond is to protect the agency from the contractor that wins the bid but gets "cold feet" and refuses to commit to a formal written agreement under the terms agreed to in the bid. There are two ways that bid bonding may be approached. The first is to consider the bid bond a penalty to defray the transit agency's cost should the low responsible bidder fail to enter into a contract. The second is to compensate the transit agency for damages incurred when it has to select the next lowest bidder.

Bid bonds are purchased by the contractor from a surety (a bonding company). One of the benefits of having a surety company involved is that the surety will investigate the contractor before it will issue a bond. The surety company, therefore, assists the transit agency in determining that if selected, the contractor is likely to follow through with the execution of the contract. The surety company is obligating itself to pay the damages if the lowest and responsible bidder refuses to enter into the contract and the contractor is unable to pay damages.

In the case where the bid bond is considered a penalty for failure to enter into a contract, the prospective contractor is allowed to make a secured deposit in lieu of a bond. In general, a five percent bond or deposit is acceptable with a limit of $5,000.

In the case where the purpose of the bid bond is to protect the transit agency from the liability of having to select the next lowest bid, the intent of the bond is to compensate for this liability. Suppose, for example, the low bid is $100,000 and for some reason the low bidder refuses to enter into a contract. Also suppose that the next low bid is $120,000 and the transit agency has suffered damages of $20,000 by the failure of the first contractor to enter into an agreement. The surety and the first bidder would be liable for the transit agency's damages. Bid bonding that compensates for this type of liability is not common and FTA guidelines recommend a five percent ceiling on bid bonds.

The use of bid bonds in service contracts is generally discouraged because it presents another impediment to competition - some potential contractors will choose not to compete because of the added financial requirements. It is recommended that bid bonding should only be used if required by state or local statutes or if the value of the contract is large (i.e., in excess of $100,000).

Performance bonds. The purpose of a performance bond is to guarantee the transit agency that the contract work will be completed and that it will comply with the contracts specifications. If the contractor fails to complete the work, the surety must complete the work.

If the contractor fails, in most cases the surety will attempt to help the contractor to continue to operate through additional short term financing. If this fails, the surety will relet the contract at its own cost.

Generally performance bonds cover one-hundred percent of the contract. They are intended to provide for the successful completion of the work regardless of the conditions of the contractor. Usually the contractor is required to produce a performance bond within ten days of notice of the award of the contract or the award is void.

FTA discourages the use of performance bonds for service contracts.[19] The cost of the performance bond discourages bidders from competing for contracts. Performance bonds are more common for construction contracts.

Attracting Bidders

Each transit system is likely to be faced with a unique set of circumstances regarding its availability to attract bidders. In most cases, where there is difficulty in attracting bidders it is because potential contractors may not view the transit system as a potential source of business. In addition, contractors may be fearful of the administrative burden associated with contracting with a public transportation operator when public funds are involved. It is, however, the managers responsibility to make sure that potential contractors are aware of the business opportunity and to make the bidding process as easy possible. **Gray Box 2-11** contains a case study of one system that had difficulty in attracting bidders and identifies how this difficulty was remedied.

Public agencies are typically required to announce their IFB in a local newspaper of "Official Public Record." The public printed announcement of an IFB is usually an unsuccessful means of attracting bidders. Clearly, it is to the transit agency's advantage to identify qualified bidders in advance of the official IFB announcement. By targeting potential bidders, the probability of receiving ample competition for services is

The Eastmore Transit System, a rural, multi-county, demand responsive system, is managed by an aggressive but relatively inexperienced young man. While at a conference on transit management he heard a manager of a peer system speak on savings it was receiving through contracting for maintenance service. Because Eastmore's board contained several proponents of privatization, he (the manager) decided to attempt to please the board by contracting for maintenance services.

When the idea was presented to the board it endorsed the maintenance contracting idea. The manager proceeded by contacting the peer manager he met at the conference. The other system's manager sent Eastmore's manager a two page IFB and a one page contract. Eastmore's manager modified the documents to fit his systems and felt prepared to solicit bids. He found out the normal duration of advertising was one month and placed an advertisement in the local newspaper's public notice column announcing the availability of an IFBs, a brief description of the work, the date, and location of a pre-bid conference, and the due date for bids.

After about one week, the manager had not received even one request for an IFB. Recognizing he had been overly optimistic to expect potential contractors to inquire with so little notification, and with a fear that his plan to win the respect of the board would backfire, Eastmore's manager developed a list of all potential contractors in the area of the system's headquarters. Each was contacted by mail. In fact, he contacted the most likely contractors by telephone. He met with and offered to explain the bid documents to potential contractors expressing interest in bidding on the services. Most of the prospective bidders admitted to having never before responded to an IFB and were unfamiliar with the bidding process. The manager also scheduled a pre-bid conference where bidding documents and procedures were reviewed. All potential contractors could then review past vehicle maintenance records, inspect the vehicles, and ask question with respect to expected services and bidding procedures.

Three bids were received for the maintenance services and the contract was awarded. The contractor that won the business would not have bid on the service had the manager not been so persistent.

2-11 An Example of Attracting Prospective Bidders

increased. The common steps utilized to attract bidder include: 1) generating a bidders list, 2) pre-qualifying bidders, 3) public and directed advertisement of the availability of the IFB, 4) conducting a pre-bid conference, and 5) allowing bidders ample time to respond with a bid.

The bidder's list

Bidders' lists may be generated to provide the agency with the names of contractors interested in competing for a particular agency contract. Contractors having failed to respond to IFBs or a Notice of Availability of similar contracts may be removed from the applicable bidders list after notice they are being removed is sent to them.

Any prospective bidder currently meeting the criteria for inclusion on the list may be reinstated on a bidder's lists at its request. The names and addresses of prospective contractors should be made available for public inspection provided the lists are not used for private promotional, commercial, or marketing purposes.

It is a good idea to develop a list of potential bidders well in advance of advertising. To develop a list of potential maintenance contractors, a transit agency could use local telephone books to identify automobile and truck maintenance providers, local automobile and truck dealers associations, and commercial truck leasing firms. Other means of identifying potential contractors to place on bidding lists may be through contacting other private and public organizations that may use maintenance contractors, such as cities, counties, school systems, colleges, hospitals, bus charter services, and taxi services. Names can also be derived from maintenance and transit trade publications.

Pre-qualifying bidders

Because it is relatively easy to enter into the automotive repair field, the number of possible contractors may be large.[c] Depending upon the nature of the transit fleet (ranging from a few small vans to a large bus fleet) and the location (rural or urban) very few potential contractors may, in fact, be qualified to provide maintenance services. The purpose of pre-qualifying bidders is to determine, if they are selected, that they will be able to provide the services bid. Pre-qualification should be performed prior to soliciting an IFB.[20]

Pre-qualification is usually based on a selection of bidders that have demonstrated past satisfactory performance and experience, have shown proof of financial responsibility, and have established their resources (workforce and equipment) are adequate to perform the services required. Bidders that cannot meet pre-qualification requirements are not permitted to bid.

Pre-qualification criteria should be evenly and fairly applied. In other words, the pre-qualification criteria should not vary with the bidder and they should not be so restrictive so as to effectively eliminate competition. In addition, pre-qualification criteria should be a meaningful set of criteria for the service provided. A meaningful pre-qualification criterion for a transit maintenance contractor is to have possession or be able to acquire an adequate facility (i.e. enough hoists, floor space and maintenance equipment) to maintain the transit system's vehicles. It may not be appropriate to require a maintenance contractor to be experienced in transit operations since prior experience with transit vehicles specifically is not likely to indicate the qualifications of the contractor to satisfactorily perform maintenance.

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[c] Although in most circumstances, the number of potential bidders is likely to be large, in practice most transit agencies receive only a few bids. In small communities (e.g., less than 10,000 population) this is particularly true because potential contractors are well aware of the capabilities of their competitors and are only likely to bid if there is good chance they will win the contract. A bid that is widely advertised in a community with several potential maintenance contractors is likely to receive several responses.

The practice of pre-qualification has been questioned. It could be argued that pre-qualification may restrict competition by discouraging potential bidders. On the other hand, pre-qualification has some very important benefits:

- **Reducing administrative burdens.** The pre-qualification process should be much simpler to complete than preparing a bid. Therefore, bidders disqualified during the pre-qualification process will avoid the cost of preparing a bid. For the agency soliciting bids, it will also reduce the administrative work of reviewing bids from unqualified bidders.

- **Screening independent of price.** Because pre-qualification occurs before bidding, price is not an issue. In the absence of pre-qualification, an unqualified bidder may submit the low bid. Suppose, for example, the contractor is financially weak and bids below the cost of the service. Then the transit agency faces the dilemma of either accepting the bid and facing the risk of non-performance, or rejecting the bid and facing a host of legal and political challenges.

- **Encourages qualified bidders.** Pre-qualification will reduce the number of competing bidders and thus provides qualified bidders with a better chance of winning the contract. In addition, qualified bidders will be attracted by the reduced likelihood of a project being won by an unqualified contractor at an extremely low bid.

  Pre-screening of potential bidders can weed out those contractors who do not possess the skills or equipment needed to carry out the contract according to performance standards set by the agency.

Public and directed advertisement

The statutes of most local and state governments have requirements regarding advertising. In most cases, agencies are required to provide public announcements of an IFB in an adequate time in the "publication of record" well in advance of the bid opening to allow potential contractors to respond. In most cases, this is one month in advance of the bid opening date. Advertisements are usually required to appear in the public notice column of the newspaper with the widest local distribution. An example of an IFB advertizement is shown in **Gray Box 2-12.** In addition, local and state advertising requirements may require that the advertisement appear more than once, in more than one publication. The agency should include the following in the public announcement:

NOTICE TO BIDDERS OF A VEHICLE MAINTENANCE OPPORTUNITY

The County Board of Supervisors of Smith County is seeking bids from qualified firms to perform vehicle maintenance on the County's fleet of eight (8) accessible paratransit buses. The successful bidder shall service and fuel all vehicles daily, perform all preventive and breakdown maintenance, and perform all emergency services.

A pre-bid conference will be held at the County's transit facility, 1503 Taylor Street NE, Smith City, at 3:00 am July 15, 1992. Sealed bids will be received the transit facility until 4:00 pm August 3, 1992. Bids will be read aloud at the County Supervisors meeting at 7:00 pm on August 3, 1992.

To obtain the Invitation for Bids, including a detailed service specification, and further information, contact Gladys Gregory, Transit Manager (509) 987-6543.

2-12 Example IFB Advertisements

- Announce the contracting opportunity.
- Briefly describe the nature of the work.
- Explain how to get more information.
- Identify where bids will be received and when bids are due.
- The name, address and telephone number of the contact person.

Since it is relatively unlikely that a potential contractor will be looking for work in the public notice column of the local newspaper, unless required by statutes, the public notice advertisement should be kept to a minimum to minimize costs. In addition, other avenues of advertisement should be pursued that are directed specifically at potential bidders. State and local associations of automobile dealers and petroleum marketers, and local Chambers of Commerce, for example, may have publications that are more likely to attract the attention of potential contractors. In addition, transit managers at peer agencies and manager's of other public agencies (i.e., city public works directors, school bus coordinator of the local school system, and the county engineer) should be contacted to identify additional organizations that provide maintenance services.

The pre-bid conference

A pre-bid conference is not a necessity. It is, however, desirable when there is a particularly large number of interested bidders or when the work is complex. Because vehicle maintenance service is likely to be complicated and potential contractors are not likely to understand the service demands of a transit agency, a pre-bid conference should usually be held. The conference should serve to fulfil three functions:[21]

- The transit agency can announce any problems or deficiencies that have been discovered with the bid documents. The agency can also provide additional explanations it feels are necessary.
- Answering any questions bidders have regarding the nature of the work, the time frame of the delivery of services, and other technical aspects regarding the service specification. The pre-bid conference would be an excellent opportunity to allow prospective bidders to inspect the vehicles and review maintenance records and costs. By allowing all bidders to ask questions, not only are all bidders provided with a "level playing field," the agency saves itself from having to answer similar questions asked individually by each prospective bidder.
- Pre-bid questions may serve to identify flaws in the original IFB specification. The two-way communication between bidders and the agency should permit discovery of any loose ends in the original IFB that need to be rectified.

The notice of the pre-bid conference should be announced to all prospective bidders who are known to have received an IFB. The conference could be set forth in the advertisement for the IFB. Conferences should be held long enough **after** the IFB has been issued to allow bidders to become familiar with the bid. They should also be held sufficiently **prior** to the bid opening to allow consideration of conference results in preparation of bids.

Nothing stated at the pre-bid conference should change the IFB unless a change is made by written amendment and sent to all who received the IFB. A written summary of the pre-bid conference should be made available to all prospective bidders who are known to have received an IFB. If a transcript for the pre-bid conference is created, it should be made part of the public record.

Bidding time

The bidding time is the period of time between the date of distribution of the IFB and the time and date set for bid opening. The bidding time should include the minimum number of days necessary to permit effective competition to occur. The minimum number of days of bidding time is often a function of local of state law. Local laws may require a minimum of 30 days to respond to an IFB. More important than identifying the minimum bid time, is identifying the amount of time it will take to attract ample competing bidders and to allow the bidders ample time to respond. This time period may be short for fairly standard procurements where there are several service suppliers and longer for complex ones. Only a couple weeks of bidding time may be needed in the case of bidding on fuel service provided through self service gasoline stations for a small fleet. On the other hand, it may require one to two months of bidding time for contractors to respond to an IFB for comprehensive maintenance services. To determine a practical minimum bid time, time should be allowed for:

- The mailing of IFBs to all parties on any applicable bidders mailing list.
- The bidders to consider the IFB and assess their interest in the project.
- The conduct of a pre-bid conference (if necessary) and ample time to distribute the meeting summary and any amendments to the IFB that occur as a result of the conference.
- The bidders to formulate bids and collect other supporting materials, including negotiating with subcontractors and arranging for any necessary bonds.
- The mailing and receipt of bids.

The notice of IFBs should make it clear that any bid received after the time and date set for receipt of bids will be considered a late bid. No late bid, late modification, or late withdrawal should be considered **unless** received prior to the contract award. The only **exception** to this rule should be if the bid, bid modification, or withdrawal of the bid would have been on-time but for the action or inaction of transit agency personnel directly serving the procurement activity. Bidders submitting late bids that are not to be considered for award should be notified as soon as is practicable.

The due date, time, and location where bids are to be delivered should be included in the IFB advertisement and in the instructions to bidders. Bids should be received in plain envelopes and upon receipt of bids, each bid and/or its modification should have the time and date recorded on the envelope but not opened.

The bids should be stored in a secure place until the time and date set for bid opening. Bids and/or bid modifications must be opened publicly, in the presence of one or more witnesses, at the time, date, and place designated in the IFB. The name of each bidder, the bid price, and such other information as is deemed appropriate by the agency should be read aloud. This information should also be recorded at the time of the bid opening. That is, the bids should be tabulated or a bid abstract made. The names and addresses of required witnesses should also be recorded at the opening of the bids. Opened bids should be made available for public inspection. Prices of services offered, and terms of payment should be publicly available at the time of the bid opening regardless of any bidder designation to the contrary.

Bid Evaluation and Award

Bids for maintenance work are most commonly awarded based on "the lowest responsible and responsive bidder" whose bid meets the requirements and criteria set forth in the IFB. The IFB is to set forth

the requirements and criteria which are to be used to determine the lowest responsive bidder. No bid should be evaluated for any requirement or criterion that is not disclosed in the IFB.

Bid evaluators

To a large degree, which individual or individuals are to evaluate the bids depends on the size of the project, the size of the agency, and the complexity of the project. If, for example, the services are to be selected solely based on low bid and little else matters, then there is little need to involve a team of evaluators. If however, the evaluation involves judging subjective attributes of competing contractors, then a group of experts should be assembled on the evaluation team. Suppose, for example, the contractor must demonstrate that the mechanics working on the transit agency's buses are, in fact, experienced with maintenance work on heavy duty diesel buses or similar equipment. Clearly, then an expert in the area of maintenance is necessary to review the qualifications of the mechanics and determine if each bidder is responsive. The evaluation team may include representation from management, the agency's financial office, a maintenance expert, a representative of the agency's operations department, and a legal expert.

Bid evaluators should be charged with the following:

- Reviewing the IFB to familiarize themselves with what was requested. Knowing what the IFB asked for will allow evaluators to determine whether bidders are responsive.

- Evaluate the personnel qualifications, facilities, financial statements, and management capabilities of bidders to determine if the bidders were responsive to the request.

- Evaluate prices bid and the cost to the agency of each bid.

- Develop a report that documents the reasons for the selection of one of the bidders and submit the report to the agencies management for approval by the agency's policy board.

Determination of nonresponsibility of prospective contractors

The unreasonable failure of a bidder to promptly supply information requested by the agency as to the responsibility of the contractor may, in itself, be grounds for a determination of nonresponsibility. Factors that may be considered in determining whether a potential bidder has met the standard of responsibility set forth by the agency may include whether it has

- The appropriate financial, material, equipment, facility, and personnel resources and expertise, or the ability to obtain them, necessary to indicate its capability to meet all contractual requirements.

- A satisfactory performance record conducting similar work.

- A satisfactory record of integrity, assessed through references, financial records, and legal history.

- Qualifications to contract with the agency - for example, the appropriate permits and licenses, meeting of all Civil Rights and Disadvantaged Business Enterprise requirements, and other requirements defined in the IFB.

- Supplied all necessary information in connection with any inquiries made by the transit agency concerning responsibility. The transit agency may ask to interview the manager assigned to the job or review the specification of equipment used to maintain the transit agency's vehicles. Failure to cooperate may be grounds for being deemed nonresponsive.

If a bidder does not meet minimum requirements, it may be disqualified and deemed nonresponsive. In addition, if the bidder fails to conform to the requirements, as stated in the IFB, it is also nonresponsive. If, for example, services bid are not those solicited in the IFB and bidder is offering a counter-proposal, the bidder may be eliminated as nonresponsive. Other examples on a non-responsive bid include a bidder proposing a preventive maintenance program that does not conform to the preventive maintenance program identified in the IFB, or providing alternative types of maintenance equipment (i.e., using floor jacks when pits or hoists were specified). A nonconforming bid is a nonresponsive bid and must be rejected.

Evaluation of bids

Once the evaluation team has identified the responsive bidders, usually the team recommends the award go to the low bidder. Where the pricing of services is simple, selecting the low bidder is straight forward. If pricing of maintenance services is based on a cost per mile, for example, then only one price needs to be evaluated. If, however, the cost of service is based on a complicated multi-price system (for an example, see bid form in **Gray Box 2-7**) or based on a total cost pricing scheme, then cost calculations may be more difficult. The total cost of services may be based on the direct cost of maintenance service, parts and consumables, the cost associated with deadheading to and from the maintenance contractor's facilities, and the cost associated with unavailability while vehicles are being maintained by the contractor. Regardless of how the cost of each bid is calculated, the evaluation team should recommend to management or the transit agency's policy board the lowest conforming bid.

Since it is possible the evaluation team may have found the low bidder was non-responsive, the evaluation report should be careful to document reasons why. Not selecting the low bidder, may result in a bid protest, which may find its way to the judicial system.

Price and cost analysis

FTA requires that its grantees perform a price or cost analysis in conjunction with all procurements.[22] A cost analysis is required when the offerer is required to submit elements of the estimated cost, for example, when buying professional services, when there is inadequate competition, or when making a sole source procurement. Price analysis is required for all other types of procurement. As an example of the difference between price and cost analysis, suppose that a grocery shopper is going to perform a price analysis on a can of vegetables. The shopper might compare the prices of different canned vegetables brands on the grocery store shelf. The shopper might also compare the price of the same brand of canned vegetables at different grocery stores or even examine what was paid for similar cans of vegetables in the past. A cost analysis would be much more detailed. The cost analysis would examine the current market price of raw vegetables, examine the cost of processing the vegetables, the cost of the canning and manufacturing the can, analyze transportation and warehousing costs, and include the grocery store's mark-up and handling costs. A cost analysis compares the contractor's bid to the costs of all the inputs going into the goods or services. Price and Cost analysis have been defined TCI, Inc. as follows:[23]

- A price analysis is an evaluation of a proposed price that does not involve an in-depth evaluation of all the separate cost elements and the profit factors that comprise a potential contractor's price proposal.

- A cost analysis is a more detailed evaluation of the cost elements in the potential contractor's offer to perform for your organization. It is conducted to form an opinion as to the degree to which the contractor's proposed costs represent what performance should cost. A cost analysis is generally conducted to determine whether the contractor is applying sound management in proposing the application of resources to the contracted effort and whether costs are proper, allowable, and can be allocated.

Guidelines for price analysis

Most contracts for maintenance services will only require price analysis. Clearly, when there is insufficient competition and only one bid is received, the transit agency must perform a cost analysis to justify a sole source procurement. In addition, it is prudent to perform cost analysis:

- If there is the appearance of anti-competitive behavior. If, for example, the bids are identical or very close, or if the evaluation team simply believes there may have been collusion among competitors, a cost analysis should be conducted to ensure the price of the services provides the contractor with only a competitive return on the work.

- If the prices of the low bidder appear too low. The bidder may be "low balling" in an effort to win the contract and later attempt to charge the transit agency for cost overruns or renegotiate the contract. Or, a low bid may be simply a result of the contractor's mistake in bid calculations or a naive estimate. In the case of mistakenly low bids, it is better to ask the bidder to withdraw or confirm the bid rather than to financially damage the bidder by accepting the bid which might mean dealing with a financially weak contractor.

A price analysis should proceed through the steps identified in the following paragraphs:

Effective competition. Where there are at least two responsive and independent bidders it is sometimes difficult to determine whether truly effective competition exists. This is particularly true when the IFB's specification is based only on outputs. An example of the difficulty of making this comparison and determining if true competition exist, is illustrated in **Gray Box 2-13.**

Compare market prices. The prices bid by contractors can be compared to similar services purchased through small purchase agreements or by other agencies purchasing similar services. When making this comparison, the evaluator should be careful to compare the prices of similar services. It is not fair to compare the price of receiving an oil and oil filter change at a commercial shop that specializes in fast service on private automobiles to the cost of providing a preventive maintenance inspection on a transit vehicle. An oil and oil filter change is very different than a preventive maintenance inspection. Although the inspection may include an oil and oil filter change, it should also entail many more activities. A preventive maintenance inspection should include inspecting several items, making any needed adjustments, lubricating any parts requiring lubrication, replacing any worn, cracked or broken parts, evaluating the present vehicle performance with a test drive, and diagnosing any likely mechanical problems.

Comparable information on prices of maintenance services can be gained from other public and private fleet operators. Public agencies such as universities, state DOTs, and city governments, for example, often have internal maintenance rates they charge back to their vehicle users. A city parks department may have to pay the public works department for maintenance performed on parks department vehicles. Other governmental groups may have maintenance contracts with private vehicle maintenance contractors. Private trucking fleets, such as delivery trucks, package carriers, and beverage and food distributors are likely to have agreements with maintenance providers and truck leasing firms.

Comparison with past prices. Existing prices should be compared with prices bid on past IFBs. For transit agencies that have never contracted for maintenance services, bids should be compared with the current cost of maintaining vehicles. Analysts should be careful when comparing current in-house maintenance costs to bid prices because often internal costs are difficult to count. Suppose an in house mechanic misdiagnoses a repair or improperly conducts a repair and the defect has to be reworked. The cost of the rework is absorbed internally and mechanics receive the same wage whether they are conducting a rework job or not. A contractor should be required to guarantee the work done by its mechanics and should not be paid for repairing mistakes.

A rural regional transit agency operates of a fleet of 60 vans and bus bodies on van chassis vehicles. The manager has had the maintenance for the fleet performed by a maintenance service firm that operates a very professional operation. In the past, maintenance services have been purchased through small purchase agreements. The current maintenance service provider has a number of other large clients including school bus maintenance for the local school district, maintaining a few private trucking fleets, and contract maintenance work for two federal agencies.

The current maintenance provider has a highly trained mechanic staff and provides incentives for its mechanics to be involved in continuing training at the local community college. In addition, the maintenance provider has a well-equipped facility, and a fenced and secured paved parking and storage area.

Recently, the transit agency manager solicited an IFB so the transit agency could develop a formal contractual relationship with a maintenance provider. Management for the agency hoped the current maintenance provider would win the bid. The specification in the IFB specified only outputs of the service and no inputs. The specification stated the contractor would have to have a secured area for parking vehicles but never identified how the area was to be secured or whether the parking area was to be paved.

Two bids were received. The present maintenance provider was not the low bidder. The low bidder was deemed responsive to the output based specification but the inputs to the maintenance services were very different from those of the other bidder. The low bidder intended to use a grass covered field as a parking area and guard dogs to secure the vehicles. The maintenance facility used by the low bidder was poorly equipped and contained almost no automated tools, only one pit, and no hoists.

In conducting a price analysis of the bids, it is clearly impossible to compare them. Each bidder bid the same services using completely different levels of input. Under this set of circumstances, the low bidder's costs could be so low that it could be earning excessive profits even at a price below the price of the current maintenance provider. This example represents an extreme case, but it does illustrate how even though there may be two competitors, there may not be effective price competition.

2-13 An Example of How There Can Be Two Bidders But No Effective Competition

Is the price comparable to initial estimates? Before proceeding with contracting, the transit agency should have made estimates of the cost of contracting, if for no other reason then for budgeting purposes. These initial estimates should be compared with the bid.

Guidelines for cost analysis

A cost analysis implies a much more detailed level of analysis. The analysis should only be elevated to this level when the agency is justifying sole source procurement or when the price analysis has led the evaluation team to believe that a cost analysis is required. The evaluation team may wish to continue on to a cost analysis when they feel the contractor has "low balled" the bid. In any case, the cost analysis should examine the following factors:

Cost elements. The evaluation team should examine cost data in the bid form or supporting calculation on an item by item basis. The contract specification may, for example, have called for maintenance labor with

significant experience working on engines and transmissions similar to those in the transit agencies vehicles, but the labor rate in the bid does not reflect that level of experience.

Need for cost elements. The evaluation team should review the need for each cost element. The elements included may be for items not required or the bidder may have left out necessary items.

Total Cost. The cost analysis should add the elements together to ensure the contractor is earning an appropriate profit and has taken into account reasonable overhead costs.

Tie bids

Low tie bids are those low responsive bids from responsible bidders that are identical in price and which meet all the requirements and criteria set forth in the IFB. The following are procedures that may be used to select a contractor.

- If the agency has used contracting for maintenance on previous occasions, the contract might be awarded to the identical bidder who received the previous award and continued to award succeeding contracts to that same bidder so long as all low bids are identical.

- The agency could reject all bids and negotiate a price with tie bidders providing the contract can be let for less than the lowest responsive bid received.

Mistakes in the bidding process

Occasionally a bidder will have made a mistake in formulating a bid. It is not in the best interests of the transit agency to award a bid to a contractor that has made an honest mistake in formulating the bid. A bid that is too low and financially punishes the contractor can result in poor services and ultimately, the defaulting of the contractor. A mistake in bidding may relate to the bond to be submitted, or any specified requirements of the contract that have been misread due to ambiguity, vagueness, or some other factor that indicates that the contractor did not understand what the transit agency required as part of the contract. In other words, there was a failure to have a "meeting of the minds."

Correction or withdrawal of a bid because of an inadvertent mistake in the bid requires careful consideration to protect the integrity of the competitive bidding system, and to assure fairness. If the mistake is attributable to an error in judgment on the part of the bidder, the bidder will not be permitted to correct the mistake. Judgmental mistakes may involve failure on the part of the contractor to judge the level of competition. The contractor may have computed either too high or too low a level of profit in the bid only to discover the level of competition was less or greater than expected. Suppose that a bidder expects strong competition for a maintenance contract but wants to get a foot hold in the transit maintenance service business. The contractor expects that once it gains experience in the transit industry, the contractor will be able to gain more business. As a result, the contractor includes no profit in its bid price. Later at the bid open, the contractor discovers the next lowest bid is 20 percent greater. Excluding a profit margin was a mistake, but it was a judgmental mistake.

A nonjudgmental mistake discovered in bidding prior to the opening of bids and one discovered after the opening of bids but prior to bid award have different implications. Before the bid opening, bidders should be allowed to withdraw their bids for any reason. They should be allowed to withdraw a bid either in person or through written notification.

After the bid opening, bid corrections or withdrawal by reason of a nonjudgmental mistake should be permitted, but only to the extent that it is not contrary to the interest of the agency or to the fair treatment of other bidders. Even if the bidder does not request to withdraw a bid, but the agency knows or has reason to suspect a mistake has been made, the bidder should be requested to confirm the bid. Situations where this might be warranted include obvious, apparent errors on the face of the bids, or bids that are unreasonably lower than other bids submitted. Items considered nonjudgmental errors (or minor informalities) are:

- The failure of a bidder to return the number of signed bids required by the IFB.
- The failure of the bidder to sign the bid. This should be allowed only if the unsigned bid is accompanied by other material indicating the bidder's intent to be bound.
- The agency has acknowledged receipt of an amendment to the IFB, and it is clear from the bid that the bidder received the amendment and intended to be bound by its terms; or the amendment involved had a negligible effect on price, quantity, quality, or delivery of the services.
- Mistakes where the "intended" correct bid is evident. If the mistake and the intended correct bid are clearly evident on the face of the bid document, the bid should be corrected to the intended correct bid and the bidder should not be permitted to withdraw its bid.
- Examples of mistakes that may be clearly evidence on the face of the bid document are;
    - Typographical errors.
    - Errors in extending unit prices on vehicle parts.
    - Transposition errors.
    - Arithmetical errors.

Mistakes in bids after the contract award has been made

The discovery of mistakes in bids can also occur after the award of the contract. In early cases involving a nonjudgmental mistake where the contractors wished to be released from the contract, the courts have argued the contractor should not be released. Allowing contractors to withdraw after an award would open the floodgates of litigation to claims of mistakes (See Steinmeyer v. Schroeppel, 226 Ill. 9, 80 N.E. 564 (1907). Releasing contractors from their contracts would tend to jeopardize the integrity of the competitive process. Later the courts began to question the inflexibility of this doctrine commenting that persons to whom an offer have been made cannot accept the offer if they know, or should know, the offer was made by mistake.(Sweet, 1990:410)

As a practical matter, a contractor should be released from a contract if a nonjudgmental mistake has been made. Regardless of the legal grounds for proceeding with the contract, it is not in a transit agency's best interest to enter into a contract under adversarial circumstances. It is very important to maintenance contracting to have a positive and flexible relationship with the contractor. It is best to release the contractor from his or her commitment if the contractor will be damaged by the award.

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9. This list of required provisions was taken from "Transit Procurement Training Based On: Orientation to Third-Party Contacting: A Seminary for UMTA Grantees," TCI, Inc, Washington, D.C., nd.

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10. Public Private Transportation Network, "A Generic Request for Proposal from Maintenance Contracting," Comsis Corporation, Maryland, 1989. p. 30.

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17. "Third Party Contracting Guidelines," UMTA Circular 4220.1B, (February 5, 1990), p.6.

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19. "Third Party Contracting Guidelines," UMTA Circular 4220.1B, (February 5, 1990), p.6.

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21. Gattis, Doeksen, and Towler.

22. "Third Party Contracting Guidelines," UMTA Circular 4220.1B, (February 5, 1990), p.I-11.

23. "Transit Procurement Training Based On: Orientation to Third-Party Contacting: A Seminary for UMTA Grantees," TCI, Inc, Washington, D.C., nd. p. 6-2.

CHAPTER 3
COMPETITIVE NEGOTIATIONS, REQUEST FOR PROPOSALS: REQUIREMENTS AND PITFALLS

While competitive sealed bidding (the IFB) is the most commonly used method for procurement of services and supplies, in many situations an IFB may not be the appropriate or most desirable procurement method. It is not desirable to use an IFB where there is no one single acceptable method for the provision of a service and where quality is a critical factor in the selection process. In such cases, a Request For Proposals (competitive negotiation) is recommended.

Most states statutes require the bid to be awarded to the lowest, most responsive, and responsible bidder. The primary criteria used to select among qualified contractors when an IFB is used is price. The distinction between a Request for Proposals (RFP) and an IFB is the use of price as the criterion for contractor selection. An RFP also permits the use of qualitative criteria in the selection of a contractor. The contractor and the agency may also negotiate the final service specifications and price. One standard that can be used to gauge which method is the most appropriate is whether the service can be described using a specific standard. Fueling services, for example, could be specified using known standards for the properties of motor fuel. Comprehensive maintenance work, on the other hand, requires independent judgment. In fact, several approaches may be needed to maintain a fleet of vehicles. As a result, it is usually desirable to procure maintenance services using an RFP. In practice, most transit agencies procure maintenance through sealed bidding methods because of the familiarity with the low conforming bid selection process.

For those interested in the RFP process, it is essential to first read the chapter on IFBs, many of the steps used are the same. The protective and required clauses that should be included in an IFB, for example, should also be included in the RFP. They should also be included in the final contract regardless of the solicitation process used.

What is an RFP?

The RFP is a public request for potential service providers to propose 1) a service design, and 2) the cost of providing the service. Because the RFP allows for post-bid variations in prices through negotiation and greater attention to quality considerations, it is somewhat less restrictive than the IFB. The RFP also allows comparative qualitative evaluations to be made when selecting among acceptable proposals. The key issues to be used in determining whether to use an IFB or an RFP are discussed in the following paragraphs.

The first question the agency should ask is whether there is a significant variation in the methods that may be used to delivered a specific service and whether there is a need for discussions of the services needed to clarify technical or price aspects of the proposal. In such cases, the selection of one proposal over another may be based on qualitative attributes and the quality of the services proposed. If the service delivery can vary and still meet minimum performance requirements of the specifications, then an RFP should be used. Because the maintenance process generally requires flexibility in the scope of activities conducted, an RFP is generally a more appropriate procurement method.

Second, the agency should determine whether attributes of the service other than price should be included as criteria for selecting a contractor. If other criteria are important, then an RFP should be used. In most cases where maintenance is being procured, the quality of maintenance services is more important than the cost of such services. Quality preventive inspections that detect potential failures (e.g., a cracked hose, a worn belt, or a loose ball joint) and preventatively repairing them, for example, can save a transit agency expensive roadcalls. The value of reducing the number of roadcalls through better quality maintenance is likely to be more valuable than the marginal difference in cost of two competitors' services. The RFP should specify the selection criteria or factors that will be used in awarding the contract. Among the criteria the RFP should list are the weights for both price factors and other criteria. Other criteria may include qualitative measures such as experience of the mechanics employed by the contractor, an assessment of the compatibility of the contractor's management with

the agency's management, the scope of the services, and any other terms of the contract that might involve subjective evaluation. In this way, if there are problems, they can be revealed prior to, rather than following the award of the contract. Examples of selection criteria that might be considered are included in **Gray Box 3-1.**

Third, the agency should determine whether bidders will need opportunities to revise their work plans after initial evaluation of proposals (including the price of the services). If so, an RFP should be used to procure services. The agency should indicate in the RFP that the contract will be negotiated and that the request is not a request to submit bids but to submit a proposal containing technical and management specifications, and cost and price aspects of each element of services to maintain the agency's vehicles. Using the RFP, both the agency and

Objectives

It is important the transit agency specify the criteria that will be used to evaluate the proposals of maintenance contractors. Because many of the criteria may be subjective, the transit agency is not required to specify exactly how qualitative measures will be assessed. Because of the need for qualitative evaluation of proposals, however, it is important that the agency's evaluation committee includes individuals who are knowledgeable of the services being proposed, the transit agency's needs, legal and administrative requirements of the RFP process and, who are unbiased, without conflicts of interest.

Listed below are examples of proposal evaluation criteria and the importance (or weighting) of each. It is important that this information is provided in the RFP to proposing contractors so they will be able to appropriately respond in their proposals.

	Criteria	Weight
1.	Disadvantaged Business Enterprise Participation In Contract	10
2.	Knowledge of Bus Maintenance as Demonstrated Through Past Experience or Through Proposal	20
3.	Proposed Scope of Work (Completeness)	15
4.	Continuing Mechanical Training of Maintenance Staff With Emphasis on Alternative Fuels and Electronic Engine Controls	10
5.	Experience in the Performance of Contract Maintenance Services	15
6.	Maintenance Management Information Systems and Compatibility With State and Federal Reporting Requirements	5
7.	Financial Resources of the Firm	10
8.	Pricing Considerations	15
	Total	100

Each proposal will be evaluated on the criteria listed above. For each criterion the proposal will be ranked 0 = Unacceptable, 1 = Poor, 3 = Good, or 4 = Excellent. Suppose, for example, that the evaluation team finds that, on an average, the contractor's knowledge of bus maintenance is good (score of 3). To determine the composite score for this contractor, experience would be give 60 points (3 x 20(the weight) = 60).

3-1 Example Bid Evaluation Criteria

the contractor will have opportunities to determine whether the proposed services provider can meet the needs of the agency.

Fourth, the agency should determine whether the award of the contract should be based on a comparative evaluation, then an RFP should be used. In many situations there are several methods that could be used to perform services and meet the requirements of the specifications. One method, however, may be preferred in a comparative evaluation. In **Gray Box 2-13** in the IFB Chapter, for example, the transit agency specified its vehicles were to be stored in a secure area. One contractor proposed that vehicles would be parked in a paved parking lot secured by a ten foot high cyclone fence. The other proposed to park vehicles in a grass field with guard dogs protecting the vehicles. Both met the specification, but through comparison it is clear the two are not the same.

Fifth, the agency should determine whether an RFP would result in a more beneficial contract for the agency. An RFP, for example, would permit the potential contractor more flexibility in the design of services. If a contractor is expected to perform drug testing of employees in safety sensitive areas, with an RFP the contractor has an opportunity to design a program that meets the minimum drug testing requirements but at minimum cost to the contractor. As an illustration, larger contractors may already have drug testing programs in place. Proposing to piggyback onto an existing program may allow the contractor to reduce the cost of meeting drug testing requirements. By not prescribing a drug testing method, the contractor may have the opportunity to take advantage of the economy of such a strategy.

The factors listed above illustrate the importance of considering both the practical and the advantageous benefits of these two options. See **Gray Box 3-2** for a presentation of comparisons and contrasts between procurement of services using an Invitation For Bids (IFB) and a Request for Proposals (RFP).

An oral RFP should never be used (i.e., a solicitation by telephone or word of mouth). If the scope of the procurement of maintenance services justifies the use of competitive negotiation, it justifies a written RFP. This will assure the agency that each potential service provider has the same understanding of the scope of the services desired and is requested to furnish the same information (Marlin, 1984). This diminishes the probability of lawsuits alleging antitrust violations. It also assures each bidder that it will receive equal information and treatment. Any use of oral RFPs may significantly increase the degree to which misunderstandings emerge between the evaluation team and those who respond to the RFP.

Contents of the RFP

To avoid misunderstandings, law suits, or failed delivery, RFPs should contain the following elements:

- Clear specifications of the type of services required by the agency.
- A clear and concise description of the work involved.
- An estimate of when and for how long the services will be required.
- A date by which proposals for the performance of the services must be submitted for consideration.
- A statement that all proposals must be submitted in writing
- A statement as to the minimum level of information the proposal must contain. This should include the following:

Invitation for Bids vs. Request For Proposals	IFB	RFP
■ Sealed bids [IFB]/offers [RFP] always opened at a public meeting; response becomes a binding contract; usually award is made after bids or offers are agreed without further dialogue.	Y	N
■ Candidates may be eliminated if bid does not show qualification/quality.	Y	N
■ Among qualified candidates. preference is given to more qualified candidate even though price is higher.	N	Possibly*
■ Pricing is primary basis of the award.	Y	N
■ Commonly a follow-up conference for negotiation	N	Y
■ Most commonly used for purchase of professional services.	N	Y
■ Competition is a factor; antitrust laws apply services after bids or offers are received.	Y	Y

* Preference given to a more expensive bidder only if the candidate is sufficiently superior. The award should always be made to the qualified bidder whose proposed services are most advantageous to the agency.

Marlin, John Teppler, Contracting Municipal Services: A Guide for Purchase From the Private Sector, A Ronald Press Publication, John Wiley & Sons: New York, (1984).

3-2 Attributes of IFBs and RFPs

- The name of the contractor, the location of the contractors' principal place of business, and if different, the place of performance of the proposed contract.
- If relevant, the age of the contractors' business and average number of mechanics it has employed over a previous period of time.
- The abilities, qualifications, and experience of all persons who would be assigned to provide the required services.
- A listing of other contracts under which services similar in scope or size that have previously been completed.
- A plan providing as much detail as is practical explaining how the services will be performed.

- The factors to be used in the evaluation and selection process and their relative importance or ranking.

Specifications

The specification of work should begin with the mission and objectives of the contract and spell out the agency's timetable and schedule for the work to be accomplished. The RFP should also identify whether the agency is interested in exercising an option to renew the contract and should specify the type and duration of the contract (e.g. whether it is a multi-year contract).

Because the RFP is usually less specific in defining the services required, it offers more flexibility than the IFB. This gives both the agency and the contractor more options. It may go so far as to provide the contractor with the flexibility to design its own services. In some cases, the agency may wish to use a two step RFP where the first step requires the submission of a general proposal. The second step would involve the agency identifying competitive contractors who would be asked for a more specific (or technical) proposal. The purpose of this two step approach is that it allows the agency to eliminate as many contractors as possible (assuming several will develop proposals in response to the RFP). In this way, the burden of developing a second stage proposal is only borne by those contractors that are highly qualified and that have a reasonably good chance of being selected. Another option would include an RFP that calls for the development of a technical proposal identifying the services proposed and a separate cost proposal.

In summary, when an RFP is used it is because the agency wants to allow the contractor the flexibility to design its own service. Thus, RFPs are usually less specific in defining the services required. Although the development of a prescriptive specification is not recommended, in practice, RFPs may be as prescriptive as any IFB. RFPs may identify a specific preventive maintenance program and even include in the RFP a preventive maintenance inspection checksheet identifying the procedures the contractor is to take when performing a preventive maintenance inspection. It is more desirable to specify the functions (e.g., the contractor is to conduct preventive maintenance, inspection, fueling, and repairs) and the expected level of outputs (e.g., availability of vehicles, miles between roadcalls, availability of spares, hours of operation, and condition of vehicles) and allow the contractor the flexibility to propose how it intends to meet such service requirements.

Pricing Mechanisms

Closely tied to service specifications is the pricing of services. The reason for this close relationship is that pricing of services can provide the contractor with an incentive to meet various levels of performance. This may govern the performance of the contractor and may avoid the need to provide specific output levels. Instead of specifying an output level for miles between roadcalls, for example, the specification can call for the contractor to provide a backup vehicle, at no cost, for use when a vehicle is unavailable for transit service. Because the selection of the contractor using an RFP is not tied to low price, the service specification and cost proposal should be reviewed separately, recognizing they are subject to later negotiation.

Like the specification, pricing should be more flexible than would be expected with the use of an IFB. Although it is not recommended, in practice transit agencies often use inflexible pricing mechanisms. An agency may, for example, require the contractor to quote prices based on time and materials or unit prices of various services (e.g., a specific price per preventive maintenance inspection, brake repair, transmission overhaul, or engine overhaul). These methods reduce the contractors' flexibility by identifying the cost per unit of activity and do not allow it the flexibility to manage its own budget.

A more flexible approach would be to allow the contractor to estimate the cost of conducting maintenance over the entire contract period and then to base periodic payments on units of outputs. The agency could ask the proposer to estimate the annual cost of the proposed maintenance and pay the contractor on a cost

per mile basis. This type of pricing allows the contractor to manage its own budget and shift resources to where they are required, thus allowing the contractor (and the transit agency) to plan on a consistent cash flow.

In cases where comprehensive maintenance or only routine preventive maintenance services are being procured, the cost proposal should typically include a cost estimate for the first year of operation. The use of the total annual cost estimates depend upon whether the contract is paid on a fixed fee basis (where the agency pays the fee quoted regardless of the actual costs), direct cost-plus-a-fixed fee, or if the contractor is compensated on some other basis, such as unit costs. Fixed fee contracts are not recommended because they provide little incentive to reduce costs. If they are used, the contractor should divide costs into categories to allow the evaluation of the reasonableness of the costs. One RFP requested the cost estimate broken down by the following categories:[1]

- Personnel costs - wages, salaries, fringe benefits, and payroll taxes for mechanics and managers assigned to providing maintenance services.
- Parts/supplies/outside services - no markup will be added to the contractor's net costs for the items or services charged.
- Overhead expenses - including such items as office supplies, uniforms, computer costs, and copying costs.
- Corporate/administrative costs - profits and fees include in cost proposal.
- Capital expenditures - expenditures for units, equipment, or other capitalized items purchased directly for performance of the services described in the proposal.
- Overtime - labor and material costs incurred by the contractor in performance of emergency or other direct work shall be paid at the fixed unit costs rate unless otherwise stated in the terms of the contract.
- Additional reimbursement items - costs incurred for unit repairs resulting from user abuse, vandalism, accident, damage, or major component failure. The reason for not including major component failures is discussed in **Gray Box 3-3**.

> If the transit agency internally covers the costs of major component failures, the contractor will not have to include in its price proposal the risk of suffering a major component failure. Because some vehicle units (e.g., transmissions, engines, and air conditioning compressors) can be very expensive, the cost buffer a contractor would have to build into its price to protect itself from the risk of a catastrophic failure, may be significant.
>
> A transit agency could, for example, define a single repair that costs in excess of one percent of the original cost of the vehicle as a major repair. An engine or transmission overhaul would fall into this cost category. Such repairs would then be absorbed by the transit agency.

3-3 Recommended Practice For Pricing of Major Repairs

If the budget for the cost estimate is itemized as defined above, then when the budget is adjusted as a result of changing conditions, the contractor and the transit agency have a basis for the adjustment.

When a contract is priced using direct costs plus a fixed fee, the estimated annual budget may be used as a means of providing the contractor with the incentive to innovate in the provision of services. The contractor may, for example, be allowed to keep a percentage (e.g., twenty-five percent) of the difference between the annual cost estimate and the actual costs. In this case, because this type of incentive provides encouragement to cut corners and reduce costs, the transit agency must carefully control contractor performance.

Terms and conditions

The RFP should set out special terms on issues including the schedule within which the services are to be performed. This should include deadlines and any penalties that will be assessed should maintenance not be performed within specified periods of time. Clearly, most activities in maintenance are continuous. The maintenance contractor may, for example, be required to conduct preventive maintenance inspections on a continuous basis. The contract should identify how these routine activities are to be scheduled and how soon after the contractor takes delivery of a vehicle the work should be completed. The schedule requirements for vehicles can be met using a performance oriented description such as the following:

> The contractor must conduct all repairs and preventive maintenance and have 95 percent of all vehicles available to meet both A.M. and P.M. peak demands and 80 percent available during the base period.[a]

Alternatively a less flexible description of service schedules might state that when vehicles have reached the mileage level where preventive maintenance is due, the vehicle will be delivered to the contractor and the contractor must have the vehicle back to the transit system within twenty-four hours.

The frequency and degree of detail the agency expects for the contractor's performance reporting requirements should be clearly specified. Typically, the contractor should prepare a monthly report of costs including year-to-date costs, types of repairs conducted, and number of preventive maintenance inspections conducted. If the specification calls for the contractor to have a computerized maintenance management system, the RFP should identify the data elements to be kept in each computer file and what types of maintenance activity and cost summaries the transit agency requires. If the system is in an urbanized areas and is receiving Section 9 funds, the contractor's reports should be compatible with Section 15 reporting requirements.[b]

The request for a price proposal should specify whether costs for vehicle maintenance services should be included in the contractor's initial response to the RFP. The agency may choose to issue a two stage RFP - a technical specifications stage and a more qualitatively evaluated management stage - each of which would then be evaluated by the agency's evaluation team.

Factors to be considered in the contract award should be clearly identified in the RFP. If, for example, qualitative issues such as 1) training and experience of mechanics, 2) quality of maintenance equipment, and 3) management experience with transit operation, are to be considered in the selection process, then the proposing contractors should be asked to identify how they will meet the evaluation criteria. The proposal can allow contractors to describe their firm's qualifications and include material they believe will be important, or the RFP can merely ask for the information desired. A sample of a qualification summary form is provided **Gray Box 3-4.**

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[a] In addition to this information, the RPF would have to explain when peak times are and base periods, where the vehicles are to be positioned in advance of pull-out, and the condition of the vehicles (fueled and ready for street service).

[b] This reference is made with respect to the Sections of Urban Mass Transportation Act of 1964, as amended.

EXAMPLE QUALIFICATION SUMMARY

Contractor
Name_____

Address_____

City_____

*State and Zip Code*_____

*Telephone with Area Code*_____

*Contact Person*_____

Primary expertise of Firm

_____

_____

_____

Date Submitted_____

Type of ownership of Firm (Circle applicable type of firm)

Individual Partnership Corporate Other MBE WBE Certified?

Years In business _____

Liability Insurance Carrier_____

Limits of Liability Insurance_____

If you are not currently carrying liability insurance, please comment on how you would proceed to provide it.

_____

_____

_____

Previous work with public agencies since 198?

	Job/Agency	Budget	Duration
1.			
2.			
3.			
4.			

Total number of mechanics working for your firm. _____

3-4 Information Form For XYZ Maintenance Contractor

List their areas of expertise and qualifications (If available, attach brief resume for lead mechanic who will conduct the proposed maintenance work).

Please comment briefly on your firm's experience in the development and execution of preventive maintenance programs on transit vehicles.

Please comment briefly on your method of record keeping, including how you would keep records on drug testing of employees.

Please comment briefly on your firm's method for controlling maintenance costs. Include a statement explaining your technique for assuring responsible cost estimates, including purchases of parts and equipment.

3-4 Continued, Information Form For XYZ Maintenance Contractor

Please comment on other issues that you believe may be relevant to the provision of professional services that may be unique to your firm or our agency. Indicate measures you will take to meet scheduling deadlines that will assure a high level of professional standards and quality maintenance.

_____

_____

_____

_____

_____

_____

_____

What is your current work load?

	Project Name/Location	Budget	Duration of Contract
1.			
2.			
3.			
4.			
5.			
6.			

3-4 Continued, Information Form For XYZ Maintenance Contractor

References

Please list clients or client representatives who may be called to discuss such issues as quality of personnel working relationships, meeting budgets, and time scheduling.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Please list a minimum of three of your major parts or service suppliers. Identify individuals within each that would be knowledgeable of your firms' experience with payment for supplies and services.

_____

_____

_____

_____

_____

_____

_____

3-4 Continued, Information Form For XYZ Maintenance Contractor

The agency should maintain accurate records of all contractors who receive the RFP. In this way it is more likely all who submit will receive fair treatment, minimizing the agency's liability to accusations it is restricting competition. This will minimize the agency's anti-trust exposure.

The agency should assure contractors any uncertainty surrounding the scope of services or the meaning of any part of an RFP will, in all probability, be resolved prior to filing a written proposal. As a result, the transit agency should anticipate the need to develop answers to any questions emerging about uncertainties. In a manner similar to the procedures followed when using an IFB, the transit agency should discuss any unclear issues at the pre-proposal conference (which is similar to pre-bid conferences used for IFBs).

The Request for Proposals should be prepared in accordance with the requirements set out for the IFB but it should also include a statement that negotiation discussions may be carried out with contractors who submit proposals determined to be reasonably eligible for a contract award. It should be stated that proposals may be accepted without such negotiations. It should include a statement as to when and how cost and technical proposals for services should be submitted.

Advertising

Public notice should be given by distributing the RFP in the same manner provided for distributing an IFB. The format for the RFP and the deadline date and time should be specified and should fully explain any unusual/unique format contractors may be required to follow in submitting their proposals (e.g., any unique qualifications needed for mechanics who work for the contractors, relevant union agreements, and/or procedures contractors would use in complying with the Federal Transit Administration's drug and alcohol testing rules).

Contractors should be aware contracts will be negotiated and the request is not a request to submit "competitive bids", but rather to submit a document proposing the technical and management, cost, price, and other elements of the offer. Information about contractors, including 1) their scope of practices or services rendered, 2) their qualifications in the areas of service needed by the transit agency, as well as 3) their knowledge, experiences, and other qualifications of mechanics should all be included with the RFP. Short biographical sketches of key mechanics might also provide a better understanding of the resources the contractor has at its disposal.

Contractor lists

Contractor lists should be maintained in accordance with the information set forth for the IFB and may serve as a basis for soliciting the RFP.

Pre-proposal conferences

Pre-proposal conferences may be held in accordance with the information set forth for the IFB and should be held prior to submission of initial proposals.

Receipt of only one proposal

If only one responsive proposal is received in response to an RFP, the agency may either make an award or re-solicit for the purpose of obtaining competitive sealed proposals. If the transit agency decides to proceed to complete the procurement with the sole proposer, the agency and the proposing contractor will enter into non-competitive negotiations. Before proceeding with a non-competitive negotiation, the agency must make sure it is authorized to proceed under local, state, and, if applicable, FTA regulations, laws, and ordinances. Transit agencies that are FTA grantees must perform a cost analysis. The price of services and the contractor's profit should be negotiated separately from the negotiation of the terms of the services.

Amendments to requests for proposals

Amendments to RFPs should be made in accordance with those set forth in the IFB chapter. Amendments should be made prior to submission of proposals. Following submission of proposals, amendments should be made in accordance with Procedures for Multi-Step Sealed bidding as set forth for IFBs.

Modification or withdrawal of proposals

This may be done in accordance with the guidelines set forth for the IFB. The established due date is either the time and date announced for receipt of proposals or receipt of modifications to proposals, if any; or if discussions have begun it is the time and date by which the best and final offers must be submitted, provided that only bidders who submitted proposals by the time announced for receipt of proposals may submit best and final offers.

Cancellation of RFPs

Just as with the use of the IFB, the RFP may be canceled, or any or all bids of proposals rejected in whole or in part as specified in the RFP, when it is in the best interests of the agency and consistent with the specifications regarding said rights as stated in the RFP.

Cancellation of solicitation and rejection of all proposals

The proposal opening date is the date when sealed proposals are due. A solicitation for proposals may be canceled in whole or in part when the agency determines in writing that it is in the best interests of the agency to do so. Reasons include, but may not be limited to the following:

- The agency no longer requires the maintenance services.
- The agency no longer can reasonably be expected to fund the procurement of maintenance services from an outside contractor.
- Proposed amendments to the solicitation would be so great that a new solicitation would be more desirable and efficient. This could occur when the agency has come under a new mandate to use alternatively fueled vehicles and the prior solicitation for proposals described only the maintenance of conventional fueled vehicles.
- When a solicitation is canceled prior to opening, notice of the cancellation should be sent to all contractors who received the RFP.
- The notice of cancellation should identify the solicitation. It should also briefly explain the reason for cancellation. Where appropriate, it should explain that all contractors will be notified of any re-solicitation or any future procurement of similar maintenance services.

Cancellation of solicitation after opening

After opening but prior to award of the contract, all proposals may be rejected in whole or in part when the agency has determined, in writing, that such action is in the agency's best interest. Reasons may include, but not be limited to the following:

- The services being procured are no longer required.

- Ambiguous or otherwise inadequate specifications were part of the solicitation.
- The solicitation did not provide for consideration of all factors of significance to the agency and hence were unclear or incomplete.
- The price of the needed services exceeds available funds to the degree it would not be appropriate to adjust the levels of services without sacrificing the quality of service of the vehicles or the safety of the public.
- All otherwise acceptable proposals received are at clearly unreasonable prices.
- There is reason to believe the proposals may not have been independently arrived at in open competition, may have been collusive, or may have been submitted in bad faith.

Reasons for rejection of proposals

A proposal can be rejected for essentially the same reasons as a sealed bid. See the chapter on IFBs for a more complete explanation of reasons for rejection of bids.

Notice of rejection of proposals

Upon request, unsuccessful offerors should be provided with reasons why their proposals were not considered for negotiation.

Evaluation of Proposals

Evaluation factors

Evaluation factors for proposals should be set forth in the RFP. **Gray Box 3-1** provides an example of criteria use to evaluate the proposals of prospective maintenance contractors. The evaluation of bids must correspond to those factors specified in the RFP. Numerical ratings systems can be used, but are not required. Criteria for consideration not specified in the RFP **may not be considered** in the evaluation process.

Proposal evaluation

Proposals should be evaluated by a team of individuals with varied interests. In a large or small urban transit system, for example, the evaluation team should include representatives from the financial/accounting, maintenance, operations, legal, and management divisions of the organization. For most small specialized and rural organizations, one or two persons may perform all of these functions. In such cases, it may be appropriate to request expert technical assistance in the evaluation process. For an illustration of the use of outside technical expertise, see **Gray Box 3-5.**

The evaluation team should use the criteria identified in the RFP to classify proposals as either acceptable, potentially acceptable, or unacceptable. If a contractor's proposal is considered unacceptable, it should be notified promptly and the agency should be available to debriefed the contractor regarding the reasons the proposal was unacceptable.

Prior to receiving new Liquified Petroleum Gas (LPG) powered vehicles, a specialized transit agency had performed all of its maintenance in-house. The added complexities of maintaining alternative fueled vehicles, more electronically controlled engine systems, and complying with more restrictive safety and environmental regulations, however, made it difficult to continue to provide efficient in-house maintenance. As a result, the agency solicited proposals for maintenance services.

Proposal evaluation, negotiation, and selection of a contractor were to be conducted in the following stages.

- Evaluation and categorization of proposals as acceptable, potentially acceptable, or unacceptable.
- Inspection of facilities of acceptable proposers. If in any step in the process, there is an insufficient number of acceptable proposals, the facilities of potentially acceptable contractors will be inspected and strategies will be identified to allow those proposals to become acceptable. If necessary, these strategies will be identified and discussed as part of the negotiations.
- Interviews with contractors that have authored proposals and facilities that meet the qualifications.
- Negotiate terms and prices with finalists.
- Select the contractor.

The transit agency has no staff members who are technical experts in the maintenance of LPG powered engines. The transit agency was a part of the county government. The county board of supervisors requested the County Engineer provide some one from the Engineer's staff to service on evaluation committee. The County Engineer placed the Maintenance Assistant to the County Engineer on the evaluation team. In addition, the transit agency manager paid an automotive repair instructor from the local community college a small consulting fee to serve on the evaluation team. Other members of the committee included the agency manager, the lead driver, and the paralegal assistant to the County Attorney.

The two outside members were able to identify technical aspects of the proposals received that would have otherwise gone undetected. One proposer, for example, planned to maintain the LPG vehicles in a garage, over pits. Its facility was not equipped with explosion proof fixtures and had inadequate ventilation. Other aspects the experts evaluated were training and qualifications of the mechanics. Ultimately, through the negotiation process, the two outside members were successful in having the winning contractor agree to send its mechanics to training programs on LPG handling safety classes (organized by the local LPG distributor) and to a training program on the fueling system used to convert engines to LPG (held at the local community college).

3-5 Illustration of the Membership and Use of a Proposal Evaluation Team

Late proposals

For late proposals, late withdrawals, and late modifications, the established due date is either the time and date announced for receipt of proposals or receipt of modifications to proposals, if any; or if discussions have begun, it is the time and date by which the best and final offers must be submitted, provided that only contractors who submitted proposals by the time announced for receipt of proposals may submit best and final offers. Any proposal received after the established due date at the place designated for receipt of proposals should be considered late, and hence should not be accepted for consideration.

Receipt and registration of proposals

Unlike the IFB, which is opened publicly (see previous chapter on IFBs), the RFP is to be opened in the presence of two or more transit agency representatives. Each proposal and any accompanying modifications should be time stamped upon receipt and held in a secure place until the date set for final receipt of all proposals. The register of proposals received should be open for public inspection only after the award of the contract and should be shown only to personnel having a legitimate interest in them. The purpose for keeping the number and identity of proposing contractors confidential is to eliminate the possibility of any contractor having an advantage.

The due date, time, and location where proposals are to be delivered should be included in the RFP advertisement and in the instructions to proposers. Proposals should be received in plain envelopes and, upon receipt of each proposal and/or its modification(s), the time and date should be recorded on the envelope, but the envelope should not be opened.

Mistakes in proposals

When mistakes are made in proposals, the agency should seek to rectify them using the guidelines specified for IFBs.

Exercise IV

Exercise Objectives: To have participants identify what are important criteria for the selection of a contractor.

Exercise Steps

1. For agency identified in Exercise I, identify what criteria is important for the evaluation of a proposal for comprehensive maintenance services. One of the criteria selected should be the price bid for the service but several other qualitative criteria should also be included. In addition place weights on each criteria on a scale of one to one hundred points where the total of weights to all criteria total one-hundred.

Criteria	Weight
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

2. Which individuals should be members of the proposal evaluation team. Please list individuals by title or job function rather than their name.

Evaluation Team Members

_____

_____

_____

_____

_____

_____

_____

_____

Interviews, Negotiations, and Award of Contract

FTA requires a price or cost analysis be conducted prior to any negotiated procurement of services. Clearly, when there is limited competition, a complete cost analysis should be conducted (methods of cost and price analysis are discussed in the IFB chapter). The results of the analysis should provide the agency with information to assist in identifying issues to be discussed in the interview and to be used as a point of reference for negotiations of the costs and contract terms.

Interview of most qualified contractors

Although an interview of contractors is not required, it is recommended. The interview of the most qualified contractors can provide an informal environment to clarify issues with regards to the proposal and the proposing contractor. Everyone who has been involved with; 1) the development of the RFP, 2) the evaluation of the proposals, or 3) who will work closely with the contractor should not be involved with the interview. The interview should accomplish two specific purposes. They are discussed in the following:

- Interviews with potential contractors should be used to determine the compatibility of the contractor with the agency, its personnel, and philosophy.[2] Several of the public agencies contacted during the research leading to the writing of this manual indicated successful contracting was largely due to the working relationship between the contractor's site manager and the transit agency's staff. Site managers who took the time to understand the requirements of the transit agency and those who possessed a service oriented philosophy tended to promote a more positive and productive working relationship. While compatibility with the agency and its staff is rarely used as a sole criterion for contractor selection, it can be used to decide between two contractors that receive very close evaluations, and should be done, if for no other reason then to reveal compatibility difficulties in advance of the contract signing.

- The interview should be used to resolve issues relating to the scope of services proposed, proposed costs, and contract terms.[3] The interview can provide the contractor with a means to elaborate on issues unclear in the written proposal. Of course, any discussions covering the proposed services and costs must be kept strictly confidential to avoid information falling into the hands of a competitor.

The agency should negotiate a contract with the best qualified contractor for the services required at a compensation level, determined in writing, to be fair and reasonable.

Elements of negotiation for the contract award

Negotiated contracts from proposals differ significantly from IFBs in that they deal with circumstances where a contract may be awarded following negotiations. While procurement using an IFB requires awarding the contract to the lowest price received by a responsible and responsive bidder, when an RFP is used, the RFP quality factors are at least given weighing equal to price. The agency should develop strategies for negotiation well before the RFP is sent out. The negotiation team should include people who will represent the various interests of the agency and, generally, the evaluation and negotiation will include the same individuals.

When entering into negotiations, members of the negotiation team should review the request for proposals and the proposals from prospective contractors. The negotiation team should learn as much as it can about the businesses of prospective contractors. The negotiation team must go through some of the same steps that were covered when writing the specification (see Chapter I). Specifically, the negotiation team should try to identify what the agency desires and what can it afford. The negotiation team must be familiar with:

- What scheduled maintenance is actually being done?
- What services would be most desirable to the agency?
- What is the minimum level of services the agency will accept?

Although costs of services are important, small differences in costs are not likely to be as significant to the transit agency as differences in the quality of services. On the other hand, small cost differences are likely to have large implications on the contractor's profit margin. Therefore, the contract negotiators should have a lot of room for give-and-take. The negotiators should always remember the reason for negotiation is to fairly explore the room for give-and-take. Without give-and-take there is no need for negotiation. In addition, the negotiation team must recognize they are entering into a long-term relationship and treat the contractor fairly with their long term interests in mind.

The next step in preparing for negotiation is for the agency's negotiation team to develop written ground rules. First, the negotiation team should decide on which member of the team will be the spokesperson for the agency. The spokesperson speaks for the agency during negotiation and handles the majority of the discussion during the meeting. Remember it is not the organization that does the negotiating, it is the individual representatives that do the negotiating. Other ground rules involve the sequence of events that occur during the negotiation. For example, will the meeting start with a spokes person identifying the objectives of the contract and then the contractor presenting his/her proposal for achieving the objects. Other rules involve how an agreement is to be formalized after negotiations are completed. The ground rules should be developed and documented in writing. The reason for written negotiation ground rules is to assure those responding to the agency's RFP that the formal process is done in a logical order and that uniformly fair treatment will be granted to all who respond. Fair and Uniform treatment is critical consideration so the agency may avoid any allegation of antitrust law violations. It will also reduce the risk of any other potential litigation brought as a result of the process.

Contract negotiations should also assist potential contractors in developing a clear understanding of the scope of the work involved, specifically the essential requirements involved in providing required maintenance services. It should be used to inform potential contractors of their obligation to make available the necessary mechanics and facilities to perform the maintenance services within the time specified for particular types of maintenance. Finally, it should be used for the purpose of agreeing upon a fair and reasonable contract price, taking into account the estimated value of required services, as well as the scope, complexity, and nature of services.

Failure to negotiate a contract with the best qualified contractor

If compensation, contract requirements, or contract documents cannot be agreed upon with the most responsive/best qualified potential contractor, a written record stating the reasons shall be placed in the file and the transit agency manager in charge of vehicle maintenance should advise the contractor of the termination of negotiations. This should be confirmed by written notice within three days after such a decision is made.

If the agency fails to negotiate a contract with the most qualified contractor, the agency manager in charge of vehicle maintenance should enter into negotiations with the next most qualified contractor. If contract terms can be agreed upon, then the contract should be awarded to that contractor. If negotiations again fail, they should be terminated and begun yet again with the next most qualified contractor.

Failure to negotiate a contract with contractors initially selected as best qualified

If the agency manager in charge of vehicle maintenance deems it unacceptable to award a contract to selected initial offeror, offers may be re-solicited or the agency may negotiate with additional offerors that provided acceptable submissions, in the order of their respective qualification ranking.

Memorandum of evaluation and negotiation

At the conclusion of negotiations, and following award of the contract, the transit agency manager in charge of vehicles should prepare a memorandum that specifies the basis on which the award was made. This should include how the evaluation factors stated in the RFP were applied to determine the best qualified offerors. It should also address the principal elements of the negotiations including the significant considerations relating to price negotiations and other terms of the contract as finally determined.

Exercise V

Exercise Objective: The purpose of this exercise is to provide the participants with a simple example of negotiating. The exercise involves one participant negotiating as the spokesperson for the transit agency and another person negotiating as the contractor's representative.

The next two pages include the assumption and background information for the negotiators. The negotiators for each side should only read the information from their side. That is, the agency spokes person should only read the information labeled **Agency Negotiator** and the contractor's representative should only read the information labeled **Contractor Negotiator**. They should then negotiate terms of a possible contract and reach a negotiated price.

In this case, the agency has already solicited proposal for preventive maintenance services, daily servicing and fuel for a fleet of 35 bus on van chassis vehicles. Three contractors were selected to advance to the stage of negotiation. The transit agency, the Metropolitan Transit Authority of Mid-America, is negotiating with Bull Dog Vehicle Maintenance Specialists.

AGENCY NEGOTIATOR

You are the director of vehicle maintenance and fleet management for the Metropolitan Transit Authority of Mid-America, a transit agency in a medium sized urban area. You are responsible for the vehicle management of all the fixed route and demand responsive public transit vehicles operated within the urban area. In addition, the transit agency's board is interested in privatizing all maintenance services but has agreed to start with the paratransit vehicles (all are gasoline powered bus on van chassis vehicles). The union representing the mechanics has not strongly objected to privatizing the maintenance of paratransit vehicles since this work represents a small portion of the total vehicle maintenance work flow and working on paratransit vehicles is viewed by the workforce as a low status activity.

You are preparing to negotiate with Bull Dog Vehicle Maintenance Specialists, one of three prospective contractors selected for negotiation. The contractor will conduct preventive maintenance at the transit agency's existing facility. However, the contractor will be responsible for facility maintenance, including the newly refurbished fueling facility (the fuel tanks were recently replaced).

The contractor will perform only preventive maintenance and routine repairs (e.g., replacement of belts and hoses, brake overhauls, engine tune-ups, etc.)and fuel for thirty-five bus on van chassis vehicles. The contract does not include corrective repairs resulting from mechanical failures, accidents, or repairs that exceed 250 dollars in cost. Corrective repairs will be awarded based on competitive quotes from a minimum of three vendors, where one may be the preventive maintenance contractor.

The Bull Dog has quoted a price of thirty cents per mile for both preventive maintenance and fuel. At the end of the first year the contract will be renegotiated. This price is three cents per mile above the price of the lowest cost proposal. The annual cost difference between the low proposal and Bull Dog's proposal is about 36,000 dollars. The estimated annual cost in the Bull Dog proposal is 367,500 dollars. However, you have surmised that Bull Dog has an excellent reputation and is best qualified to conduct the work.

You are concerned about the 36,000 dollar price differential and know it would be difficult to justify the differential. However, you like the qualifications of the mechanics and technicians and management of Bull Dog, and feel they would make a good partner for the transit agency if it decides to expand maintenance contracting to include more of the fleet. Other concerns you have include:

- Although the lead mechanic which Bull Dog plans to use for preventive maintenance is well qualified, Bull Dog plans to use a mechanic's helper to conduct the fueling and routine servicing. You would like the qualified mechanic to inspect the vehicles every morning, rather than a mechanic's helper.

- Bull Dog plans to keep your vehicle maintenance records on paper. You want them to computerize their record keeping system so their records are compatible with your system. Initial software and hardware for the vehicle maintenance record keeping system should cost roughly 4,000 dollars.

- In the long-run, you believe all vehicle maintenance will be conducted by a contractor. However, you are concerned about the transit agency's own employees. At the time of privatization of the entire maintenance operation, it is likely the contractor will be required to offer the existing technicians and mechanics positions at comparable benefit and wage levels. Although the issue of future employment for the existing employees is not a point of contention yet, it will be in the future. Bull Dog did not address this issue in their proposal. Another contractor has offered to give existing transit authority employees the first opportunity to interview for the new jobs (at roughly their current wage and benefit package) that will be created by the contract. If Bull Dog were selected, you would like to see them take a positive position toward hiring current transit authority employees.

CONTRACTOR NEGOTIATOR

You are the owner of Bull Dog Vehicle Maintenance Specialists. Your firm conducts contract maintenance for private vehicle fleets. The firm has developed a reputation for quality service and has a well-qualified staff of vehicle mechanics and technicians. However, with a downturn in the economy in the area (around the City of Mid-America) your annual revenue has declined. Rather than lay-off some of your staff, you have sought to expand your business by proposing on public sector contracts. The contract you are presently negotiating is the first time you have entered into negotiation with a public agency.

The service you have bid on is to perform preventive maintenance and routine repairs (e.g., replacement of belts and hoses, brake overhauls, engine tune-ups, etc.) and fuel thirty-five bus on van chassis vehicles. The contract does not include corrective repairs resulting from mechanical failures, accidents, or repairs that exceed 250 dollars in cost. Corrective repairs will be awarded based on competitive quotes from a minimum of three vendors, where you are permitted to bid on the preventive repairs. All work will be conducted at the Transit Authority facilities and the contractor will be provided use of the agency's newly refurbished fueling facility, but you must supply the fuel.

The services you have proposed includes one lead mechanic and one mechanic's helper. The lead mechanic will be responsible for local management of the operation, scheduling work, ordering parts, and preparing maintenance records and cost reports. The helper would perform routine maintenance activities, under the supervision of the mechanic, maneuver vehicles, get parts and supplies, and fuel vehicles. The difference in the salaries and benefits of a helper and a lead mechanic is roughly 10,000 dollars per year.

Your price for the service is thirty cents per mile with the rate to be renegotiated at the end of one year. Based on the estimated mileage during the year, the total revenue from the contract should be about 367,500 per year. Your estimate of the cost is based on an expected after-tax profit margin of seven percent.

You would very much like to get the contract because it will provide you with experience in the public sector which may lead to addition work prospects. In addition, unless you win the contract with the transit authority, you will have to lay-off a mechanic. If the mechanic is laid off, it is likely that he will be unable to find a new job immediately and Bull Dog will be liable for unemployment insurance and severance benefits.

<u>Negotiate the best deal possible!</u>

Reference

1. Public Private Transportation Network, "A generic Request for Proposal for Maintenance Contracting," Comsis Corporation, Maryland, 1989. p. 49.

2. J.T. Marlin, Contracting for Municipal Services: A Guide For Purchase From the Private Sector, Ronald Press Publication, New York, New York, (1984), p. 72.

3. Marlin, p. 72.

CHAPTER 4
DRUG AND ALCOHOL TESTING: ISSUES FOR CONSIDERATION IN MAINTENANCE CONTRACTING

On December 21, 1989, transit agencies receiving Urban Mass Transportation Administration (UMTA) operating assistance in urbanized areas over 200,000 in population were required to initiate drug testing of employees in safety sensitive positions.[a] On December 21, 1990, transit systems in urbanized areas under 200,000 in population were to start drug testing of employees working in safety sensitive positions. A United States Court of Appeals, however, struck down the regulations, ruling that UMTA statutory authority did not extend to making uniform, national requirements applicable to local transit authorities.

Then, on October 28, 1991, President Bush signed into law the FY1992 Department of Transportation Appropriations Bill which included the Omnibus Transportation Employees Testing Act. The Act gives the FTA the statutory authority to require transit systems receiving federal assistance to conduct drug and alcohol testing of employees in safety-sensitive positions. The provision calls for five types of testing. They are as follows:

- Pre-employment testing.
- Reasonable suspicion testing.
- Random testing.
- Post-accident testing.
- Periodic testing.

The U.S. DOT has up to one year from when the bill was signed to issue regulations concerning testing. The Federal Transit Administration (FTA) is expected to issue a Notice of Proposed Rule Making (NPRM) regarding drug and alcohol testing provisions expected in late 1992 or early 1993. An NPRM for alcohol testing has been delayed and is not expected until the winter of 1992-93.

One of the more significant aspects of the drug and alcohol testing provisions signed in October of 1991, is that they preempt any conflicting state or local law. Such conflicts played a major part in FTA's earlier national drug testing efforts. When several transit systems attempted to carry out testing requirements, many discovered that FTA-mandated testing clashed with both local and state laws prohibiting such testing.

At this time (October, 1992) it is not absolutely certain that vehicle maintenance contractors doing business with transit agencies will be covered under the FTA's new regulations. Nonetheless, if drug testing requirements are passed through to the transit agencys' maintenance contractors the information contained in this chapter will help guide transit agencies to develop relationships with independent maintenance contractors.

It is important to note that included in the new statute are provisions allowing the FTA to promulgate regulations regarding the suspension or dismissal of employees who are determined to have used or have been impaired by drugs or alcohol while on duty. This includes employees who have been shown to have used a controlled substance, ***whether on duty or not.*** If testing is mandated, it will be conducted according to Department of Health and Human Services guidelines to protect employee (privacy) rights and to ensure the accuracy of tests. The American Public Transit Association's (APTA) *Drug and Alcohol Task Force* and the *Community Transportation Association of America* (CTAA) will be developing transit industry comments as rulemaking proceeds under this new legislation.

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[a] The Urban Mass Transportation Administration (UMTA) became the Federal Transit Administration (FTA) in 1991.

Chapter Objectives

The purpose of this Chapter is to identify how drug and alcohol testing requirements may, if necessary, be passed along from the transit agency to the maintenance contractor. It provides an understanding of the issues related to testing and how they may affect the agency's employees as well as the contractors. There are some differences in applying drug and alcohol testing regulations to the employees of the contractor as opposed to the transit agency's own employees. It is one matter to enforce a drug and alcohol testing program on your own employees and quite another to enforce a program for the employees of a contractor.

Throughout the chapter, readers should think about the relationships they might be expected to develop with their contractors regarding testing. One issue of importance may be whether the contractor should be included in the same testing program established by the transit agency, or whether it should be allowed/encouraged to implement its own program so long as it meets FTA standards. Another issue may be whether the contractor pays for testing and absorbs employees' wages while they travel to and from collection sites or whether the transit agency might reimburse the contractor for each testing event. Some of the problems of enforcement of testing requirements on a contractor's workforce will also be discussed.

Drug Testing Origins: A Historical Context

The primary goal of drug and alcohol testing in public transportation is to identify, using objective criteria, employees who pose a threat to public safety. It is anticipated testing policies can be used to curb substance abuse in the work place. At the same time, it is projected testing may increase consumer confidence in public transportation as an alternative transportation mode. Substance abuse (including both drug and alcohol abuse) results in large numbers of work place injuries and deaths each year. Moreover, it costs the nation billions annually in lost production time and damaged equipment. It is estimated that drug abuse alone costs the United States economy 26 billion dollars annually.[1]

More than 16 billion dollars are in costs to industry, involve work related activities, and include factors such as:

- Lost productivity.
- Accidents involving property damage and personal injury.
- Absenteeism.
- Disability claims.
- Theft.[2]

Individual employees with alcohol problems alone may cost their employers as much as $2,500 per year in production losses and absenteeism.[3] As an example of the seriousness and widespread abuse of alcohol, over a seven-year period, the Inspector General within the United States Department of Transportation found that 10,300 individuals who had previously had their driving licenses revoked for driving while intoxicated became certified pilots.[4] A related study found that in 1986, 30 percent of 300 randomly selected truck drivers tested positive for drugs or alcohol.[5]

The Federal Railroad Administration has also recorded evidence of alcohol and drug-related accidents occurring between 1975 and 1983. Its data showed that these accidents resulted in 34 fatalities, 66 non-fatal injuries, and 28 million dollars lost in railroad property and direct costs.[6] Craft Consultants, a drug education and counseling firm, has estimated that four million workers abusing drugs in the workplace have been referred for treatment within the past few years.[7] In light of escalating costs and the scope of substance abuse in the United States, it is understandable that serious measures are being taken to decrease its pervasiveness.

Because of the privacy issues that arise, as agencies set drug programs into place, they must realistically address the training needs of supervisors who will be making testing referrals of safety sensitive

employees. Supervisors must be well informed so they can recognize and act on the signs and symptoms of drug and alcohol abuse. Only in this manner can the safety of the public, and of the employees themselves, be assured. While supervisors keep a watchful eye on their employees, they must also take special precautions to avoid over-reacting to behaviors that may be suspicious, yet lacking in empirical evidence. Employee rights must be carefully balanced against the public's right to safe public transportation.

Drug and Alcohol Testing Issues

The public safety is seriously endangered by transportation workers who are employed in safety sensitive jobs and use drugs and alcohol. In New York City, for example, on August 28, 1991, a subway motorman's train derailed. Five people were killed and more than 200 injured in the crash, the worst New York subway disaster in 63 years.[8] Despite warning by the motorman's coworkers to supervisors about dangerous driving pattern, he was allowed to continue to operate a subway train, until the motorman ran his train across a switch at high speed. As reported in the August 29, 1991, edition of the New York Times newspaper:

> The front of the first car was clearing the switch and turning onto the local track when the car jumped from the tracks. It veered right, striking the western wall of the subway tunnel, and then careened left, slashing through more than a dozen steel beams.

In an ideal world such accidents would not occur, nor would it be necessary to test those employees who are not substance abusers. Given the hidden danger substance abuse can present to coworkers, passengers, and/or the general public, however, it appears justifiable to use a testing program that works to ensure employees in safety sensitive positions do not endanger the public they are designed to serve.

Proponents of drug testing argue, given the seriousness of productivity losses and the potential for a decline in public safety, aggressive agency actions are needed to curb drug and alcohol use by employees in the work place. They support their argument by pointing out that of 40,000 federal workers tested between April 1, and September 30, 1990, only 200 - 1/2 of one percent - tested positive for any illegal drugs.[9] Joseph Autry, Director of the Division of Applied Research of the National Institute on Drug Abuse says these low numbers of positive results among federal workers provide evidence that testing does act as a deterrent to drug abuse.[10]

Critics of testing, on the other hand, argue the rate of drug abuse among employees in safety sensitive positions is significantly lower than for the general work place.[11] They argue the low rate of positive tests for drugs is evidence of this.[12] Some go a step further and argue drug testing contains a basic and inherent flaw in "it tests for the wrong thing."[13] The suggestion is made that a realistic employee awareness or assistance program to detect workers whose condition puts the agency, its maintenance contractor, or the general public at risk should test for the condition actually creates the danger.

They go on to point out that the reason alcohol or drug impaired bus drivers or mechanics are dangerous is because their reflexes, coordination, and timing are deficient. Thus, there is a danger in testing only for the existence of drugs in the system. An employee's impairment could be a result of many factors, including drugs, alcohol, or even family or emotional problems. Drug testing, for example, measures only the presence of drug traces in urine. A serious drug/alcohol policy would recognize the real problem as worker's impairment and test for that.[14]

It is logical to argue that workers whose abilities are seriously impaired should not be driving buses, repairing buses, or working with potentially dangerous machinery. Perhaps these are some of many reasons why, although transit system managers and employees view drug and alcohol testing as yet another administrative burden, they also agree it is necessary for their safety sensitive, labor intensive industry. Moreover, it is now the law.

The American Public Transit Association (APTA), *Drug and Alcohol Task Force* has conducted a survey of drug testing practices of approximately 450 urbanized transit systems.[15] Of 240 agencies responding to the survey, 155 had initiated drug testing programs prior to or shortly after the December 21, 1989, first deadline for transit systems serving large urbanized areas. Of these 155 agencies, approximately 80 percent continued to test even though FTA's initial drug testing regulations were suspended. These results suggest a majority of urbanized transit systems have adopted drug testing procedures recognizing the growing consequences of substance abuse in the work place. Twenty-six of the agencies surveyed by APTA had implemented drug testing programs as early as 1985, four years prior to FTA requirements.

A more recent study (1991) conducted by Booz, Allen, and Hamilton, Inc. surveyed 306 transit agencies, excluding small systems below the largest 400 U.S. transit systems and excluding the commuter rail and intercity bus systems regulated separately by another DOT administration. They found, particularly with small transit systems, that over two-thirds of the transit systems surveyed do not believe they have a substance abuse problem. Nonetheless, formal substance abuse policies are widespread and generally include both drug and alcohol testing. Despite the perception that drug and alcohol use are not serious problems, 93 percent of the those surveyed indicated they have written substance abuse policies, 85 percent provide some sort of substance abuse training for employees, and 79 percent do at least some drug or alcohol testing.[16] While a significant number of transit agencies test only for drugs, virtually all systems that test for alcohol also test for drugs.

Rural agencies have been more reluctant than their large, urban counterparts, to embrace drug testing and to adopt testing policies. They argue that testing creates a costly administrative burden far greater than any anticipated safety benefits.[17] One reason is that small systems are less self-sufficient and more often dependent upon contractor support services for maintenance, fueling, and emergency services. Small rural systems, for example, said they would find it difficult, if not impossible to impose and enforce testing on their contractors.

The issues surrounding the difficulty of enforcing testing requirements on contractors working for small transit systems are critical. Convincing arguments are set forth that the administrative costs of drug and alcohol testing will remain a significant burden for very small transit systems (e.g., those systems with fewer than 8 vehicles). Because requirements for testing may include any contract service provider that engages in work that is ongoing, continuous, and routine, most small agencies are likely to be affected.

The element that may have to be met to pass through the drug testing requirements from the transit agency to its maintenance service provider is there must be a "relationship" between the agency and the service contractor. When it is established that this relationship exists, the agency could be required to certify the contractor is conforming to any FTA drug and alcohol testing requirements. An ongoing relationship defined by the FTA could include, for example, small purchase agreements to purchase fuel from a local service station. It probably would not, however, include functions such as emergency services, e.g., a call to a local service station to repair a flat tire during a road call. On the other hand, non-vehicle maintenance support, including maintaining passenger shelters and maintenance of support equipment, and communication systems could be covered under future FTA rules. Also subject to the future FTA rules might be those who supervise employees performing any of the services listed above.

If a formal contract or relationship exists, agencies might also be required to certify that contractors are conforming to the FTA drug and alcohol testing requirements. Compliance could be achieved by including contracted employees within the agency's drug testing program. Otherwise, the contracting organizations might be required to develop their own policies and programs in compliance with any FTA requirements.

If the maintenance contractor's employees were to be tested under the agency's program, the agency would probably not wish to become involved in hiring or disciplinary practices relating to the contractor's

employees. The agency's only role would be to decide which of the service provider's employees perform sensitive safety functions.

To determine the extent to which drug and alcohol testing might deter maintenance contractors from working with transit agencies, Iowa State University conducted a survey of transit agencies that contract for maintenance services through written agreements. The survey focused on identifying agencies' actual and anticipated experiences with substance abuse testing. Telephone survey interviews were conducted of 23 agency managers that contract for maintenance alone or maintenance plus some aspect of route operations.

Some of the contractors had drug testing programs already in place (The study was conducted prior to FTA's projected inclusion of alcohol testing provisions). Those testing were maintenance contractors with multiple sites that also did work in the trucking industry. A majority of the remainder of those interviewed that had discussed drug testing with their contractors indicated any FTA testing requirements would be applied and accepted by contractors. Agencies included in the survey ranged in size from two to forty-seven vehicle fleets with most operating demand responsive services.

The sample size in the Iowa State study was small. As such, it is suggested additional research needs to be conducted in this area prior to drawing too many conclusions about the effects of testing on small transit agencies. At the same time, however, these preliminary findings suggest even small agencies procuring services through competitively awarded contracts for services should be able to find support service contractors willing to comply with the FTA's drug and alcohol testing mandate.

What types of employees could be subject to testing for drugs and alcohol? Any employees who perform safety sensitive functions, and their supervisors could become subject to the FTA's drug and alcohol testing requirements. Categories of employees covered by the FTA projected rules are expected to include:

- Employees operating revenue vehicles.
- Employees providing support in vehicle movement control, including dispatchers, and others working in safety sensitive positions.
- Revenue vehicle inspection and maintenance personnel, including mechanics and technicians who perform inspection and maintenance on revenue vehicles or their components, and employees who perform servicing functions like fueling and lubricating, and repair damage from accidents or vandalism of revenue vehicles.
- Non-vehicle maintenance support including vehicle movement control systems, passenger stations, and equipment, and communication systems.
- Supervisors whose employees perform any of the above mentioned functions.
- Contract service providers and maintenance contractors doing routine and ongoing business with transit agencies receiving federal funds.

To be a success, transit agency management, the contractor's management, and the contractor's personnel (including union leaders if contractor's shop is unionized) must support the fundamental purpose of a drug and alcohol testing policy. They must acknowledge it is not merely designed to ensure compliance with any FTA regulations. Rather it should be designed to support the ultimate goal of a safe, drug and alcohol free work place. This could be an important consideration for agencies considering contracting out for maintenance of their vehicles. Ensuring contractors will voluntarily cooperate with agencies in assuring drug and alcohol

free vehicle maintenance may well be an important consideration in assuring continuity of FTA funds for basic agency operation.

All potential contractors, including union shops, would need to be apprised of the importance of a drug and alcohol free workplace. This should be communicated to the contractor prior to bidding evaluations so they clearly understand that *implementation of substance abuse management programs including drug and alcohol testing is an agency requirement.* Should testing be implemented, the Request For Proposals (RFP) or the Invitation For Bids (IFB) should contain a requirement for the contractor to have a drug and alcohol testing policy including detailed testing procedures for its employees based upon a policy statement to address such matters as:

- Training requirements.
- Drug and alcohol testing protocol.
- Employee assistance program provisions.
- Disciplinary actions.
- Records.
- Reports.

Consolidation of such procedures in a "sample procedures" manual to accompany the RFP would enhance a mutual understanding between contractors and agencies and emphasize the importance of testing objectives. Furthermore it would impress upon potential contractors the agency's commitment to a drug and alcohol free work place. Such a manual would need to emphasize that substance abuse creates the potential for deterioration of job performance. The following are suggestions contractors may use in the formulation of an effective substance abuse management policy. Policies should include guidelines designed to:

- Help employees, not hurt them.
- Reflect a commitment to a drug free workplace.
- Protect all employees and the public from injury and economic loss due to affected employees.
- Help to create a deterrent environment discouraging use, possession, and sale of drugs on or off the operator's property.
- Designed to provide information to those who want it, help to those who need it, and skills to those who need to apply them.
- Provide a consistent process for disciplinary action (including termination) when necessary.
- Not place employees under a cloud of suspicion or coercion.
- Not attempt to do the job of law enforcement authorities.

In addition, the following statements could be included in a written substance abuse management policy:

- This (contractor name) is committed to a drug and alcohol free workplace, which protects the operations' most valuable resource - - its employees - - as well as the health and safety of the public.

- The manufacture, use, sale, distribution, possession, or presence in the body, of prohibited drugs in the workplace may result in employee termination.

- The legitimate use of controlled substances prescribed by a licensed physician is not prohibited. Employees in safety sensitive positions should inquire of their physicians, and notify the appropriate employer representative, of the use of prescription medications which may adversely affect job performance.

- All employees in safety sensitive positions shall be subject to drug and alcohol testing prior to employment or assignment, for reasonable cause, following an accident, on a random basis, and prior to return to duty, if they fail to pass a drug or alcohol test.

- Any person who fails to pass a required test shall be subject to disciplinary action, up to and including termination.

- Employees are encouraged to voluntarily utilize the services of the employee assistance program, if provided, to deal with drug use and alcohol misuse before it affects on-the-job performance. Voluntary self-referral to the employee assistance program shall not, however, relieve the employee from responsibility for adequate job performance. Self-referral after notification of a required drug or alcohol test will not eliminate the requirements to take such a test, nor will it preclude the taking of disciplinary action against an individual who fails a required drug test.

It would be critical for senior management to be involved in the communication of the policy. All employees would need to be informed of the policy before the date of its implementation. It is important to include some form of employee assistance for drug and alcohol treatment as part of the policy. Employees should be made aware of how and when services will be made available if they are needed.

Additionally, employees would need to know which classes of safety sensitive positions are covered. In the case of drug testing they would need to know which drugs are being screened. Employees should be aware of any disciplinary action that may result from a failure to submit to testing. They should understand the reasoning behind the use of "reasonable suspicion" testing. The employee's understanding of the grounds for "reasonable suspicion" testing could help reduce the possibility of hard feelings between the employee and the supervisor when a reasonable suspicion situation arises. For an example of the potential for friction between employee and supervisory, see **Gray Box 4-1.**

There should be time allotted to clear up misconceptions and concerns. The agency would have to be sure the person answering the questions was knowledgeable about all aspects of the agency's program. The explanation of the drug and alcohol testing policy would provide procedural due process and in that regard serve as protection of employee right to privacy.

Suggested procedures for disciplinary action

If the transit agency or the transit agency's contractor sets up a disciplinary code of responsibility relating to its substance abuse policy, it would place employees on notice that management was serious about a drug and alcohol free work place. Such a code would also make employees aware that management intends to be fair but firm with offenders. During a review of the policy on drug and alcohol testing at the time of hiring it is important to clearly communicate the disciplinary code. When hiring, employees should be provided with a precise definition of what constitutes a violation of the agency's substance abuse policy. The agency must be precise in defining any disciplinary action resulting from violation of the policy. The following are topics that should be addressed in an educational session to make employees aware of the disciplinary code:

Insubordination - refusal to submit to a drug test. If testing is implemented, an employee's refusal to comply with requests for drug or alcohol testing or any attempt to adulterate, contaminate, or substitute a specimen collected for purposes of testing may be considered insubordination. The first offense might result in disciplinary action up to and including termination. **Gray Box 4-2** contains a case study of a difficult employee.

Positive random drug test. If testing is implemented, all employees should have the right to challenge a disciplinary action through the appeals process. The appeals process describes the employee's rights, and

Joe has been a vehicle maintenance repair person for 22 years. He has always been very dependable. During the past three months, however, his attention does not appear to be focused on his work. A number of his co-workers have casually commented Joe has been leaving his work area in a mess, his uniform is always dirty, and his mood swings are creating unnecessary conflict. His supervisor has noticed his maintenance workorders are incomplete, inaccurate, or altogether missing. Joe has also missed work six days within the past three weeks due to what he calls the "flu". He has been habitually late for work during the past three months.

When asked if he has any problems, Joe replies he is alright, just a bit tired and asked his co-workers to please stay "off his back". One of Joe's co-workers discovered that Joe's wife recently left him after 23 years of marriage, and suggested the supervisor should just let him "work it through." After all, he has 22 years of service in. Yesterday, however, Joe got into a shouting match with the shop foreman after he had misdiagnosed two repairs where the vehicles had to be returned to the dead line for rework. Joe's behavior is getting to the point where he is disrupting the work place. His supervisor wants to fire Joe, because he is not sure whether it is a drug problem, or whether he is just being a pain. If the supervisors suspicions do not bear out and he is wrong it may affect the working relationship with Joe. He does not want to demoralize a long term employee.

Case Study Discussion Questions

What should Joe's supervisor do? Does Joe have any symptoms that indicate a substance abuse problem. Is there reasonable cause to have Joe tested for drugs?

4-1 Illustration of a Sensitive Situation to Require a Reasonable Cause Drug Test

should be presented in conjunction with the disciplinary code established by the agency/contractor. The appeal process should include:

- A description of the time limits for submitting an appeal.
- The management review process.
- Provision for final appeal, if any.

Employees should be informed of their right to request a second laboratory test, albeit at their own expense at the same and at a different testing laboratory to confirm or reject previous test results. An example appeals process policy is included in **White Box 4-3**. For any employee who has a positive test result on a random test, the first offense could result in one of the following sanctions:

- Suspension from duties without pay.
- Referral to an employee assistant program.
- Re-entry to work only upon a negative test result contingent upon availability of a position.
- A second offense will result in termination.

Recommendations for disciplinary policy: Reasonable Suspicion Testing

Supervisors are in the best position to evaluate an employee's job performance. Their role in documenting employee behavior places them in situations where they are already specially qualified to evaluate all personnel. Supervisors should keep accurate records of their employees' job performances and conduct periodic performance-evaluation interviews. Supervisors will, however, need special training to help them

Art is a AA class mechanic who has worked for a truck leasing and maintenance firm that has a small fixed route transit system as one of its clients. Art has worked for his current employer for 15 years. He is a loner and rarely interacts with co-workers after hours. He is sometimes moody, but is still a good employee who works hard. He prefers to work the late shift.

Art seldom misses a day of work. The shop supervisor has been giving him increasingly more responsibility and is considering him for promotion to foreman on the second shift.

The latest physical inventory of the parts room indicated a sizeable amount of shrinkage had taken place since the last inventory, indicating pilferage. One day when the shop supervisor returned to the garage unexpectedly, Art was startled and hurriedly shoved something into his tool chest. Art acted very nervous and seemed anxious for the shop supervisor to leave.

Art makes a good salary. Recently, the agency received an order to garnish Art's wages. Today, the shop supervisor received an anonymous phone call from someone accusing Art of dealing and using cocaine. When you confronted him with this, he became very defensive and accused you of harassing him. When you informed him you had reason to have him tested for drugs, Art said, "When pigs fly. Why are you persecuting me like this?"

Case Study Discussion Question

What should you do?

4-2 Illustration of a Difficult Relationship Between Employee and Supervisor

identify the patterns of changed behavior, physical appearance, and job performance that signal drug or alcohol testing may be in order.

Documenting unsatisfactory job performance levels has been demonstrated to be a successful method of eliminating the kinds of work behavior that costs agencies money. For any employee who tests positive for drugs following a reasonable suspicion testing, the first offense could result in one of the following sanctions:

- Suspension from duties without pay.
- Referral to employee assistant program.
- Return to work only following a negative test result contingent upon the availability of a position.
- Making the employee aware that a second offense could reasonably result in immediate termination.

Recommendations for Disciplinary Policy: Post-Accident Testing. If the FTA implements post accident testing, any employee who tests positive for drugs following an accident in which personal injury to passengers and /or property damage is incurred,the first offense could reasonably result in on of the following actions:

- Suspension from duties without pay.
- Termination upon the completion of an investigation.
- Referral to an employee assistant program.
- Return to duty only following negative test results contingent upon availability of a position after suspension.

SAMPLE: **Employee Appeal Process**

Company Name_____
Date _____

SUBJECT: APPEAL PROCESS FOR DRUG-FREE TRANSIT INFRACTIONS

I. **Purpose:** To define the appeal process for disciplinary action taken as part of the drug free transit program.

II. **Persons Affected:** All employees of the transit system and all employees employed by contractors responsible for conducting maintenance of transit agency vehicles.

III. **Appeal Process:** Any employee who feels that a disciplinary action taken against him/her is unfair, discriminatory, or unfounded should take the steps outlined below.

Management Review:

- Discuss drug test results with the medical review officer (MRO)
- Discuss disciplinary procedure with immediate supervisor.

Formal Appeal Process:

- If the matter cannot be resolved through the MRO and/or supervisor, notify the general manager in writing of the desire to appeal within five days. The written notice should include the facts and the circumstances of the matter in dispute including any extenuating or mitigating circumstances.
- The general manager (and other system/employee representatives, if appropriate), will meet with the employee within two weeks of receipt of the notice to appeal.
- The employee will be encouraged to present his/her reasons for the appeal with support documentation and/or statements from other individuals.
- The individual's supervisor will be requested to provide input and/or recommendations to the general manager.
- Upon hearing the facts, the general manager (committee) will recommend a final resolution based on the relevant information.
- The employee shall be notified in writing within five days of the meeting of the final resolution of the matter under appeal.
- The general manager shall be the final level of review and appeal. The general manager's decision is final and binding.

4-3 Appeals Process Policy Statement

- Making the employee aware that a second offense could reasonably be expected to result in immediate termination.

Recommendations for Disciplinary Policy: Follow-up Test. If the FTA implements re-entry testing, for any employee who tests positive for drugs **after** having re-entered the work force following a prior positive test result, the first offense should result in immediate termination.

Recommendations for Disciplinary Policy: Under The Influence. If the FTA implements under the influence testing, any employee found to be under the influence of alcohol or any other illegal substance (e.g. possession of a prohibited substance in the body) should be subject to disciplinary action.

The penalty for employees refusing to be tested should be severe. In essence it should be considered equal to a positive test result resulting in removal from a safety sensitive position.

If there are special circumstances, suspension could be used as an alternative sanction to termination. If, however, an employee/mechanic is suspended, he/she should expect to be required to submit to drug testing in order to return to work.

Employee Assistance Programs (EAPs)

Under the new FTA rules, transit agencies and contractors may not be required to provide EAP services, nor may they be required to provide job security for persons who fail to pass a drug or alcohol test. Many organizations, however, have discovered EAPs are cost-effective elements of successful substance abuse management programs.[18] Typical EAP programs provide the following services for employees:

- Initial problem identification.
- Chemical dependency assistance (assessment, treatment planning, monitoring, and aftercare).
- Short-term counseling.
- Referral to community counseling services.
- Re-entry contract monitoring.
- Employee awareness.
- 24-Hour crisis lines.

For help in designing the scope of services provided in an EAP, the FTA has provided a manual for agencies.[19]

Drug and Alcohol Testing Issues that Might Be Specified in the Maintenance Contract

When the FTA rules are finalized, transit agencies and their contractors may need to work out operational issues of drug and alcohol testing. Many agencies and firms require employees to submit to testing following an accident involving property damage or personal injury regardless of who appears to be at fault. If the agency wishes to designate such requirements, they must be identified in the contract specifications.

When the contractor's employees are taking a drug or alcohol test, the employee will not necessarily continue to receive a salary while away from the job. In the case of a remote rural transit operator, the amount of time an employee is away from the job taking a drug or alcohol test may be significant when the collection site requires a long travel period. As a result, the contract specification should identify whether the contractor will be compensated for the added unproductive time associated with testing. As a practical matter, for a time and materials priced contract, the transit agency should probably be billed for the time the mechanic is away from work. For all other pricing mechanisms, testing should be considered a cost of doing business and included as part of the overall fee. The same is true for the cost of the test.

In general, it is preferable for the contractor to create a drug and alcohol testing policy that includes provisions for discipline and sanctions identical to those of the transit agency's. The drug and alcohol testing 'program adopted by an agency should be formulated through a negotiated agreement between the labor force and management. Therefore, given the philosophy of the program, the service specification should not require the contractor adopt the transit agency's testing policy but rather that the contractor's program avoid setting requirements, sanctions, and discipline policies less stringent than those of the transit agency.

As mentioned previously, some potential maintenance contractors, with large organizations, may already have drug and/or alcohol testing programs in place that satisfy FTA requirements. In these cases, there is no need for the transit agency to assist the maintenance contractor in establishing and operating a testing program. On the other hand, potential contractors that do not have established testing programs may need the assistance of the transit system to establish a drug and alcohol testing program in compliance with FTA rules. For a maintenance contractor with two employees, for example, it would be a significant administrative burden to hire a Medical Review Officer, develop an agreement with a testing laboratory and a sample collection site, conduct supervisory and employee training, and establish an EAP, as well as conduct random drug testing, with a pool of only two employees. In this instance, the maintenance contractor should be given the option of joining the transit agency's testing program.

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CHAPTER 5
CONTRACT CONTROLLING GUIDELINES

Enforcement of the conditions of a maintenance contract requires the transit agency to monitor the contractor's performance. Generally, service contracts are more difficult to monitor and control than contracts for goods. The difficulty is associated with the need for continuous oversight. Agencies must be aware of the management requirements necessary to provide adequate control. Those agencies managing successful maintenance contracts will allocate as many resources to manage and audit a contractor as they would to manage their own workforces.

Ideally, controlling should involve quantifiable measures of performance, reported on a routine basis. Many attributes associated with maintenance services, however, are qualitative. It is not uncommon, for example, to see contracts describing the performance of maintenance contracts in terms like "workman-like quality," "professional workmanship," or "highest priority." The use of qualitative descriptors should be discouraged whenever possible, but sometimes they are unavoidable. If possible, performance attributes should be identified in the IFB/RFP, and in the contract. If, for example, what was intended by "highest priority" was that the maintenance be completed as quickly as possible, then the contractor should be provided with a specific timeframe within which work on the vehicle is to begin (e.g., a maximum of four hours after delivery).

Controlling involves two basic activities. The first consists of reports and data the contractor is required to provide.

- A contract whose price is based on time and materials, may require the contractor to furnish itemized reports of labor and materials used during each maintenance action or a monthly report to identify maintenance activities and costs for each vehicle. Where the specification is based on output, the contractor could be required to report vehicle availability.

The second activity involves inspecting and auditing conducted by the transit agency.

- The transit agency should inspect the work conducted by the contractor and inspect the site where the maintenance is being performed on a routine and/or random basis. Some agencies have their operators evaluate vehicle performance, some have management staff check vehicles to ensure services were performed correctly, and others limit inspection to exceptions (when something goes wrong).

Philosophy of Controlling

One of the limitations faced by transit agencies, both large and small, is an understanding of the principles of maintenance management. This facet of agency "business" is often viewed as one requiring technical skills and knowledge of the requirements for actually conducting maintenance. Therefore, it is not uncommon for maintenance managers to be promoted up through the ranks of mechanics. It is in fact not accurate to say that maintenance managers must know the techniques of performing hands-on maintenance tasks. Although they have little technical knowledge of how to perform specific maintenance activities, some of the most qualified maintenance managers -- who have expertise in transit operations, business, and/or engineering -- have developed into capable maintenance managers.

The primary strength of maintenance managers who were <u>not</u> promoted to management from the ranks of mechanics, is that they leave the maintenance functions to qualified technical personnel and involve themselves solely with management functions - planning, staffing and personnel, controlling, etc. It is critical they understand maintenance functions, are able to develop a maintenance management plan, and understand maintenance programs. Understanding these functions does not require knowledge of each specific maintenance action. It is, however, important they become knowledgeable of maintenance management functions, the

contractor's operations, and its capabilities. If it is at all possible, the contract manager should not focus on individual maintenance jobs but rather on work flow management and agency mandated contractor performance standards. The manager should, for example, review work orders and check invoices for accuracy and discrepancies, and review reasons for any repeat maintenance. This might also include inspection and road testing of vehicles.

This "description of responsibilities" for contract managers means they should not personally become involved in making decisions regarding specific maintenance requirements. The contract manager, for example, should not become involved in determining the maintenance procedures to use for a specific repair or which mechanics to be assigned to a specific job. As part of the contractor selection process, the agency should selected qualified individuals to determine techniques for performing maintenance. Upon award of the contract, this will then free the contract manager to concentrate on overall costs of contracted activities, the quality of work performed, and the timeliness of work completed for the agency.

The contract manager should attempt to be conciliatory and flexible. Developing an adversarial relationship, where the contractor is viewed as cutting corners whenever possible, is counterproductive. It is the contract manager's responsibility to develop a working relationship with the contractor. The only way this can be accomplished is if the contract manager develops an understanding of the contractor's operations. Developing such a relationship will require the contract manager to devote time to understanding the contractor through face to face dialogue. It is not uncommon for contract managers to require weekly meetings with the contractor to review the past week's work and to discuss the coming week's maintenance schedule and other factors related to work load. In addition to weekly meetings, contractors and contract managers commonly meet for impromptu meetings to resolve specific problems and to discuss issues that emerge from the work flow. An example of the difficulties created when the contract manager does not devote the time necessary to effective management is presented in **Gray Box 5-1**.

Types of Controls

Contract controls should flow from the specification and pricing mechanisms identified in the IFB/RFP. The manager of a contract priced based on time and materials would, for example, review each repair and service billing. The manager of a fixed-priced contract would not focus on maintenance job billings because the cost of maintenance is fixed.

Pricing based on time and materials

With a time and materials priced contract, the contract manager should pay close attention to each maintenance event. Suppose, for example, the contract price is based on time and materials and the contractor guarantees all minor repairs (repairs less than $300 of parts and labor) for a minimum of three months and all major repairs (more than $300 of parts and labor) for a minimum of six months. Any repairs that do not meet the minimum life limits will be corrected at the contractor's expense.[8]

The contract manager must keep track of past repairs. Usually this will involve keeping, for each vehicle, a file folder or computerized file of documents describing each maintenance activity (i.e., a work order or invoice). When a vehicle is diagnosed as having a specific maintenance problem (usually, reports of defects

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[8] Contracts with guarantees against repeat repairs should not hold the contractor responsible in the event of a repeat repair caused by driver abuse or accident. Some contracts with guarantees for repeat repair have identified how to mediate a dispute between the contractor and the transit agency when the two parties disagree on the cause of the repeat repair. Usually mediation will involve a disinterested third party or group of disinterested individuals.

Two years ago, an entrepreneurial specialized service transit manager of a private not-for-profit social service agency in the City of Westwich promoted the expansion of the agency's transit services. He successfully won a number of service contracts. As services expanded, the fleet grew. When it reached ten vehicles, it was clear the operation had outgrown its maintenance agreement with a local service station. As a result, the manager developed an IFB and solicited bids from maintenance contractors. The contractor that won the bid was a local car dealer.

This was the first maintenance service contract the car dealer had ever bid on. The dealer was pleased with the new business and sought to expand his maintenance contract business. First he bought a sophisticated computerized maintenance management information system. Then he began bidding on new work. He successfully won a service contract with two federal agencies and with the City of Westwich for maintenance of the City's municipal fleet. He also entered into an agreement with a beverage distributor.

The transit manager saw the contract with a reputable car dealer as a means to diminish his role in vehicle maintenance. This would allow him to devote his time to expanding the transit service and promoting better coordination with other transportation and social services. The manager had adopted a "contract and forget it" attitude. His disinterest in maintenance activities was clearly illustrated last year. A peer transit manager from a nearby town was investigating contract maintenance for adoption at her agency. When the two managers were visiting the car dealer's facility, the car dealer's service supervisor showed both managers the preventive maintenance program the car dealer had developed for the transit vehicles and the vehicle histories the dealer had in his computer. The Westwich manager admitted he had no idea the dealer had developed a regimented program of preventive maintenance beyond the manufacturer's recommendation. He was astonished at the level of detail of the maintenance management data collection process.

During the last year, the car dealer has become so busy that maintenance service backlogs became commonplace. Because no one from the transit agency took an active interest in maintenance services, when transit vehicles were delivered to the car dealer's garage, they would often wait two or three days before work was started. During this time, the contractor worked on his other client's vehicles. Because of the delays, on several occasions the transit agency's dispatcher would postpone preventive maintenance inspection in order to get the vehicles back into service.

The drivers occasionally complained about the lack of attention paid to maintenance but nothing was changed until one of the vehicles suffered a roadcall while taking a dialysis patient to a major medical facility 100 miles from Westwich. The roadcall was caused by a rupture in a worn radiator hose. Luckily, it was possible to reschedule the patient for dialysis. Concerned about the possibility of another emergency roadcall, the transit manager scheduled a meeting with the contractor. After a careful examination of the contractor's computerized maintenance records, it was discovered the vehicle had not received a preventive maintenance check for six months. The potential seriousness of a similar roadcall impressed upon the agency's manager the importance of careful management of the contract. Unfortunately, the transit manager's prior disinterest in vehicle maintenance has generated a lackadaisical attitude in the contractor's maintenance workforce toward the transit agency's vehicles. Now the manager faces the difficult job of rebuilding the integrity of the maintenance program.

5-1 Example of the Need to Work With the Contractor and Need For Face-to-Face Dialogue

are made by the drivers, but occasionally by the mechanic during an inspection), the contract manager should review the vehicle file to determine whether the repair is a repeat or related to a prior maintenance activity.

A simple and common form used to summarize past work and to make it easier for the contract manager to review past work is shown in Figure 5-1. When an invoice or workorder is received from the maintenance contractor, the contract manager should fill in one line of the form. This form should provide a summary of the work and a convenient means of analyzing maintenance costs. For a more detailed analysis, the contract manager can refer to the work order or invoice that details the work conducted.

When maintenance work is completed, the contract manager should review the invoice to determine whether the maintenance work carried out was reasonable. The vehicle should be visually inspected for signs that the repairs were made and that the vehicle was not damaged while being repaired. The vehicle should also be test driven to ensure the condition has been corrected (for an example, see **Gray Box 1-1**). To determine the reasonableness of labor and materials charges, the contract manager should make comparisons with repair times in manufacturer's warrantee allowance manuals or, for light duty equipment (i.e., vans and van conversions), in third party labor guides.[b]

Time and materials contracts usually require the filing of monthly activity reports and a monthly bill. It is advisable to schedule monthly meetings with the contractor's site manager to review the monthly activity report and bill. At that time the two managers can discuss any exceptions in the previous month's work (i.e., costly or unusual repairs). The contract manager can recommend and propose changes to current services or procedures, and the two managers can discuss the maintenance schedule and any irregular vehicle requirement for the coming month.

Pricing based on direct costs plus a fixed fee

Contracts based on direct costs should be controlled in the same fashion as those priced on a time and materials base.

Fixed fee priced contracts

Contracts based on a fixed fee require a performance oriented approach to contracting. Since the price of services is fixed when the contract is signed, the contract manager does not have to be concerned about controlling costs. Because the contractor's means for increasing profit are to reduce costs, the contract manager must carefully monitor and audit the quality of service.

Commonly, fixed fee contracts will have quality controls such as vehicle availability and minimum miles between road calls. The contractor should periodically provide reports of these performance measures. In addition, the contract manager may wish to spot check work and inspect the contractor's facility to visually inspect work methods and materials.

Another input to the quality control process should be the driver's pre and post trip check sheets. Figure 5-2 illustrates a driver's check sheet. Drivers should be instructed to provide input using this check sheet. This will allow quality control of the performance of vehicles. A unique and valuable method for obtaining quality control information is identified in **Gray Box 5-2**.

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[b] Although there are several labor guides ("flat rate manuals"), one of the most popular manuals is the Chilton Book Company's "Labor Guide and Parts Manual for Cars and Light Trucks," Chilton Way, Rador, PA 19089.

Figure 5-1 **Vehicle Maintenance History Ledger**
(taken from "Maintenance Management Information System Manual," Institute for Urban Transportation, Indiana University, Bloomington, IN, (1988).

The City of Haystack has a population of 6,000 and operates a fixed-route transit system. Route service and maintenance are provided by a contractor, but the city owns the transit coaches used to provide maintenance services. The responsibility for management of the contract was assigned to Haystack's Assistant Director of Public Works. The City also manages the transit services through an appointed, five person transit policy board. The Assistant Director of Public Works serves as Chair of the committee. The policy board meets with the contractor on a monthly basis.

The City's charter for the transit policy board requires all board members to regularly use the service. The Board meets with the contractor on a monthly basis to review service statistics and to conduct its business meeting.

An abnormally large proportion of Haystack's population is elderly (20 percent). Three of the five policy board members are senior citizens. Board meetings are usually well attended by the town's senior citizens. Because of the board members' active involvement and because of significant interest on the part of the general public, the Assistant Director of Public Works feels she is provided with good input on the performance of route service. She feels the route service portion of the contract is being adequately inspected by the board and by other riders. Until two years ago when the contract was bid, however, she did not feel as if she had been adequately controlling the quality of vehicle maintenance.

In the past, the Assistant Director had personally inspected the contractor's facility and the vehicles at least once a month. Nonetheless, she felt her knowledge of maintenance was inadequate to make judgments as to whether deterioration of vehicles was a result of normal wear-and-tear or due to inadequate preventive maintenance. The most recent contract included a new inspection provision. It required the Public Work Department's lead mechanic and the contractor's mechanic to thoroughly inspect all transit vehicles every six months. The purpose of these inspections was to determine whether the vehicles were being properly maintained. Following inspections, the City's mechanic was to file a written report of recommendations for the transit policy board.

The first inspection of the two vehicles took an entire day to complete. The City's mechanic meticulously inspected every mechanical system in the vehicles, ranging from loose panels and bolts, to operational tests of the brakes, steering columns, and air conditioners. The mechanic developed a long list of recommendations. Most were a result of sloppy maintenance procedures - loose body panels, and dirt, oil, and grease in the engine compartment - and easily remedied.

The contractor quickly instituted a number of better housekeeping practices. The next six months' report developed by the City's mechanic contained only two recommendations. In the ensuing two six-month inspections resulted satisfactory evaluation and no maintenance recommendation. The City's mechanic did recommend the City plan to buy two new buses - - the old ones were reaching the end of their physical lives. Based on the mechanic's recommendations, the transit board recommended the City Council budget funds for new buses. Had the contractor made the same recommendation, it is doubtful the same response would have been reached.

5-2 An Illustration of An Inspection Method Used to Control Contract Maintenance

IUT - IDOT

VEHICLE OPERATOR INSPECTION REPORT

Number:_____ Vehicle:_____

PRE-TRIP BLOCK

	OK	SERVICE NEEDED	SERVICE CRITICAL
EXTERIOR:			
Windshield glass	☐	☐	☐
Windshield wipers	☐	☐	☐
Mirrors	☐	☐	☐
Tires (tread & pressure)	☐	☐	☐
Headlights	☐	☐	☐
Stop/tail lights	☐	☐	☐
Turn/emergency lights	☐	☐	☐
Clearance lights	☐	☐	☐
Body damage	☐	☐	☐
Cleanliness	☐	☐	☐
ENGINE:			
Oil level	☐	☐	☐
Radiator level	☐	☐	☐
Windshield washer fluid	☐	☐	☐
Belts & hoses	☐	☐	☐

	OK	SERVICE NEEDED	SERVICE CRITICAL
INTERIOR:			
Cleanliness	☐	☐	☐
Seatbelts	☐	☐	☐
Emergency equipment			
Flares	☐	☐	☐
Fire extinguisher	☐	☐	☐
First aid kit	☐	☐	☐
Radio	☐	☐	☐
Horn	☐	☐	☐
Brake and peddle	☐	☐	☐

Comment on any item that was not checked OK, or any item that is not satisfactory.

_____

_____

_____

_____

_____

POST-TRIP BLOCK

	OK	SERVICE NEEDED	SERVICE CRITICAL
STEERING:			
Ease	☐	☐	☐
Stability	☐	☐	☐
Free play	☐	☐	☐
GAUGES:			
Oil pressure	☐	☐	☐
Generator	☐	☐	☐
LIGHTS:	☐	☐	☐
Headlights	☐	☐	☐
Stop/tail lights	☐	☐	☐
Turn/emergency lights	☐	☐	☐
Clearance lights	☐	☐	☐
Dashboard	☐	☐	☐
TIRES:			
Inflation	☐	☐	☐
Air pressure	☐	☐	☐
Condition	☐	☐	☐
BRAKES:			
Peddle range	☐	☐	☐
Application	☐	☐	☐
Sensitivity	☐	☐	☐

	OK	SERVICE NEEDED	SERVICE CRITICAL
TRANSMISSION:			
Sound	☐	☐	☐
Shifting	☐	☐	☐
ENGINE:			
Sound	☐	☐	☐
Starting	☐	☐	☐
Power	☐	☐	☐
Performance	☐	☐	☐
CLIMATE CONTROL:			
Air conditioning	☐	☐	☐
Heater	☐	☐	☐
TRANSMISSION:			
Sound	☐	☐	☐
Shifting	☐	☐	☐

Comment on any item that was not checked OK, or any item that is not satisfactory.

_____

_____

_____

_____

_____

Ending mileage:_____ Fuel:_____ (gal's) Cost:_____ Work order #:_____

Starting mileage:_____

Operator's signature:_____ Date:_____

Figure 5-2 Vehicle Operator Inspection Report
(taken from "Maintenance Management Information System Manual," Institute for Urban Transportation, Indiana University, Bloomington, IN, (1988).

On at least a monthly basis, the contract manager and the contractor's site manager should meet to discuss performance reports, comments from drivers, and any exceptions found during inspections. These meetings should also be used to discuss any irregular vehicle scheduling or maintenance requirements anticipated for the coming month. More frequent discussions should take place over routine issues. Regular meetings at least once a month should be scheduled to promote a dialogue between the contractor and the transit agency.

Unit cost priced contracts

When maintenance services are priced based on unit costs, usually dollars per mile or per hour of operation, contract management should be handled in a manner similar to that used for a fixed fee priced contract. Because pricing is fixed, controls should be quality oriented.

Inspection

It is important for the contract manager to inspect the contractor's facility. The primary purpose of the inspection should be to see how the work is be conducted in order for the contract manager to gain an accurate understanding of work flow, work procedures, and work methods. Inspections should not be viewed as attempts to "catch" the contractor abusing a vehicle or being slipshod in the performance of services. If, however, irregularities are noted, they should be brought to the attention of the contractor's site managers.

The transit agency bears the legal responsibility for actions taken by the contractor on behalf of the agency. (For an explanation of the legal liability for actions of a contractor, see **Gray Box 5-3**) Therefore, the transit agency needs to monitor the contractor's actions to protect the agency from liability and to promote the safe operation of vehicles. The transit agency should, for example, take "reasonable" steps to ensure the contractor is abiding by the agency's drug and alcohol testing policy. If alternatively fueled vehicles are being maintained by the contractor, the transit agency is responsible for taking reasonable steps to ensure the contractor's employees have adequate training and have the appropriate tools and equipment to work on the vehicles.

An agency cannot transfer liability to its contractors. The transit agency is, for example, responsible for determining whether the contractor is qualified to work on agency vehicles. If the contractor's maintenance procedures are unsafe and the agency has not taken reasonable steps to ensure the contractor is following safe maintenance procedures, the transit agency will be found liable in the event of damages resulting from a failure to perform maintenance safely.

The transit agency can protect itself by inspecting the contractor's facility and work to take reasonable steps to ensure prudent practices are being followed and that the contractor meets all regulatory and legal requirement. In addition, the transit agency should require the contractor to carry liability insurance.

5-3 Legal Liability of an Agency for the Contractor's Actions

Depending on the management style of the contract manager, several formats could be used in inspections. The manager of one small urban transit system likes to follow an informal style and visits the contractor's facility daily while the mechanics are on their morning coffee break. After socializing with them over a cup of coffee he walks through the facility examining any work in progress at the time. This style works for this particular manager because of his own personal style. Other individuals may require a more formal

format for inspections. Very small agencies that work with a local car dealer or a service station may find that the only routine inspection necessary is to inspect work being completed.

Conclusions

It is not uncommon for public agencies to believe contracting will reduce administration. This has not been found to be the case in examples of successful contracting. Agency's adopting a "contract and forget it" philosophy towards contracting are likely to be disappointed with the results. Contract management requires constant and thorough monitoring of contractors. The contract manager should be clear on how he or she intends to monitor performance, identify exactly what the transit agency desires, and what steps are likely to be taken if performance is not found to be satisfactory. Specific and systematic controlling of contractors while maintaining a flexible and conciliatory relationship is likely to offer positive results.

APPENDIX A
STATE STATUTES GOVERNING CONTRACTING IN THE FIFTY STATES

The purpose of this appendix is to identify many of the state statutes that are relevant to public agencies seeking to contract for maintenance services. Although the appendix is voluminous, it is by no means all encompassing of relevant state statutes and is only a snap-shot of the statutes taken at the time when the search was conducted (1991). State laws may have changed since the time when the review was conducted. In addition, this chapter does not identify relevant local governmental statutes and agency rules. It does, however, provide a point of departure for understanding relevant state statutes. Ultimately, an agency seeking to contract for services may wish to seek the advice of an attorney knowledgeable of local contract law. An attorney should review all contract documents.

Statues Governing Contracting in the Fifty States

Issues revolving around maintenance contracting

- Bidding requirements
- Wages
- DOT requirements for contracting
- Dispute resolution in contracting
- Use of parts' specifications (e.g., OEM parts)
- Performance bonds and liquidated damages for contract default
- Life cycle cost bidding
- Contract exclusivity
- Liability of contractor/transit agency in case of accident
- Liability for parts purchases
- Preference to local sellers
- Single source items
- Emergency procurements
- Qualifications of contractors
- RFP/lFB Request for Proposals and Invitation For bids

ALABAMA

Alabama Supplement, 1989 Article 2 Competitive bidding on public Contracts Generally

Section 41-16-20 Contracts for which competitive bidding required generally

All contracts, of whatever nature for labor, services or.....involving $5,000 or more made on behalf of any state authority or office shall be let by free and open competitive bidding, on sealed bids, to the lowest responsible bidder.

Article 3 Competitive Bidding on Contracts of Certain State and Local Agencies, etc.

Section 41-16-50 Contracts for which competitive bidding required; manner of awarding contracts generally; award of contracts to resident bidders; negotiation of contracts; joint contracts

(a)(1) All expenditures that are $2,000 or more shall be made under contractual agreement entered into by free and open competitive bidding, on sealed bids, to the lowest responsible bidder. In the event only one bidder responds to the IFB, the awarding authority may reject the bid and negotiate the purchase or contract, providing the negotiated price if lower than the bid price.

(2) When a definite sum is not determinable prior to contracting, prior contracts for similar type service..... shall be used as criteria for ascertaining whether competitive bids should be let.

(c)(2) All bidders must furnish a bid bond on any contract exceeding $10,000 provided that bonding is available for such services, equipment, or materials.

Article 5 Contracts for Sale of Certain State Property

Section 41-16-54 Advertisement for solicitation of bids; bids to be sealed; opening of bids; bids, etc., to be retained and to be open to public inspection; when purchases of contracts may be made in open market; contracts not to be split to avoid requirements of article; certain partial contracts declared void.

(a) All proposed purchases in excess of $2,000 shall be advertised by posting notice on a bulletin board maintained outside the purchasing office and in any other manner and for such lengths of time as may be determined; provided that sealed bids shall also be solicited by sending notice by mail to all persons, firms or corporations who have filed a request in writing that they be listed for solicitation on bids for particular items as set forth in request. if anyone whose name is listed fails to respond to any solicitation for bids after the receipt of three such solicitations such listing may be canceled.

(b) All bids shall be sealed when received, opened in public at the hour stated in notice and all original bids together with all documents pertaining to award of the contract shall be retained and made a part of a permanent file or records and shall be open to public inspection.

(d) No purchase or contract involving an amount in excess of $2,000 shall be divided into parts involving amounts of $2,000 or less for purpose of avoiding the requirements of the statute.

Section 41-16-55 Effect of agreements or collusion among bidders in restraint of competition; knowing participation in collusive agreement.

Such actions will render the bids of such bidders void and shall cause them to be disqualified from submitting further bids to the awarding authority of future purchases. Any knowing participant in collusive agreement in violation shall be guilty of a misdemeanor and upon conviction, shall be fined not more than $500 and may be imprisoned in the county jail or sentenced to hard labor in the county for not more than 6 months.

Section 41-16-57 Awarding of contracts generally; preference to be given to state firm, in contracts for purchases of contractual services; when sole source may be specified; rejection of bids.

(a) Bid to lowest responsible bidder taking into consideration the qualities of the commodities proposed to be supplied, their conformity with specifications, the purposes for which they are required, the terms of delivery, transportation charges and dates of delivery.

(b) Purchase or of contract for contractual services shall give preference, provided no sacrifice/loss in price/quality, to those within the state. No county official . . . . charged with the letting of contracts or purchase of materials may specify the use of materials . . . by a sole source, unless;

(1) Said person can document to satisfaction of the state that the sole source service is of an indispensable nature, that all other viable alternatives have been explored and determined that only this product or service will fulfill the function for which the product is needed. Frivolous features will **not** be considered.

(2) The sole source specification has been recommended by the . . . engineer of record and also documents that there is no other product available and that the use of the requirement is of an indispensable nature and why.

(3) All information substantiating same must be in writing and filed into the project file.

(c) Awarding authority shall have the right to reject any bid if the price is deemed excessive or quality of product inferior.

(d) Each record, with successful bid indicated, and with reasons for the award if not awarded to lowest bidder, shall be open to public inspection.

(e) Contracts for contractual services shall be for periods of not greater than 3 years.

ALASKA

Article 2 Competitive Sealed Bidding: Section 46.30.100 General Policy

(a) Unless specifically exempted by law, an agency contract shall be awarded by competitive sealed bidding. Uses RFP when it is impractical to initially prepare a definitive description to support an award based solely on price.

Section 36.30.110 Invitation to bid

(a) When competitive sealed bidding is used, the procurement officer shall issue an invitation to bid. Must include a time, place, and date by which bid must be received, purchase description, and description of all contractual terms and conditions applicable to the procurement.

(b) When responding to IFB, the bidder shall supply evidence of a valid state business license.

Section 36.30.115 Subcontractors

(a) Within 5 working days after ID of apparent low bidders, they shall submit a list of the subcontractors they propose to use in the performance of the contract. This list must include the names and locations of the places of business for each subcontractor and evidence of its valid state business license.

Section 36.30.120 Bid Security

(a) Security may be required for competitive sealed bidding for contracts for. . . services . . . in accordance with regulations of the commissioner when needed for the protection of the state.

(b) Bid security must be a bond provided by a surety company authorized to do business in the state or otherwise supplied in a form satisfactory to the commissioner. It must be in an amount equal to at least:

(1) 10% of the amount of the bid if the bid does not exceed $100,000; or

(2) 10% of the first $100,000 and 5% of the amount of the bid over $100,000 if the bid exceeds $100,000 up to a maximum of $200,000 in security.

Section 36.30.130 Public notice of invitation to bid

(a) Adequate public notice at least 21 days prior to date for opening of bids. if determination is made in writing that a shorter notice period is necessary for a particular bid, the 21 day period may be shortened. Determination shall be made by chief procurement officer for bids for. . . services . . . . The time and manner of notice must be in accordance with regulations adopted by the commissioner of administration. Practicable notice may include:

(1) publication in newspaper calculated to reach prospective bidders;

(2) notices posted in public places w/in the area where the work is to be performed...

(3) mailed to all active prospective contractors on the appropriate list maintained under **Section 36-30-050** (The commissioner shall establish and maintain lists of persons who desire to provide. .. services. .. to the states. Person who desires so shall submit to commissioner evidence of valid state business license).

(b) Failure to comply with notice requirements does not invalidate a bid or the award of a contract. If the state fails to substantially comply with requirements of (a) of this section, the state is liable for damages caused by that failure.

Section 36.30.150 Bid acceptance and bid evaluation

(a) Bids shall be unconditionally, without alteration or correction, except as authorized in **Section 36-30-160** (see below). Bids will be evaluated based on requirements set out in the IFB, which may include the following criteria to determine acceptability:

(1) inspection,
(2) testing,
(3) quality,
(4) delivery, and
(5) suitability for a particular purpose.

Criteria that will affect bid price and be considered in evaluation for award **must be objectively measurable**, such as discounts, . . . and total or life cycle costs. The IFB must set out evaluation criteria to be used. Criteria may not be used in the bid evaluation if not set out in the IFB.

(b) A contract based on total or life cycle costs may be awarded **only when** the procurement officer.... determines in writing at the time of the contract solicitation that the contract promotes overall economy for the purpose intended, encourages competition, is not unduly restrictive, and is in the best interests of the state.

Section 36.30.160 Late bids; correction or withdrawal of bids; cancellation of awards

(a) Correction or withdrawal of inadvertently erroneous bids prior or after bid opening or cancellation of awards or contracts based on bid mistakes may be permitted in accordance with regulations adopted by the commissioner. After the bid opening, changes in bid prices or other provisions of bids prejudicial to the interest of the state or fair competition may not be permitted. Decision must be in writing by procurement officer.

NOTE: if the bidder is permitted to withdraw the bid prior to the award, an action may not be maintained against the bidder/the bid security.

Section 36-30.170 Contract award after bids

Contracts will be awarded based on solicited bids with reasonable promptness by written notice to lowest responsible and responsive bidder whose bid conforms in all material respects to the requirements and criteria set out in the IFB.

Section 36.30.190 Multi-step sealed bidding

When it is considered impractical to initially prepare a definitive purchase description to support an award based on price, the procurement officer may issue an IFB requesting the submission of unpriced technical offers to be followed by and IFB limited to the bidders whose offers are determined to be technically qualified under the criteria set out in the first solicitation.

Section 36.30.210 RFPs

Must contain the date, time, ad place for delivering proposals, a specific description of the . . . services or.....to be provided under the contract, and the terms under which the. . . . services,....are to be provided.

Section 36.30.240 Discussion with responsible offerors and revisions to proposals

(a) Offerors reasonably susceptible of being selected for award shall be accorded fair and equal treatment with respect to any opportunity for discussion and revision of proposals, and revisions may be permitted after submissions and before award of the contract for purposes of obtaining the best and final offers. In conducting discussions, the procurement officer may not disclose information derived from proposals submitted by competing offerors.

(b) In determining whether a proposal is advantageous to the state, the procurement officer shall take into account according to the regulations of the commissioner whether the offeror qualifies as a state bidder.

Section 36.30-260 Contract execution

- A contract awarded under competitive sealed proposals must contain:

(1) the amount of the contract stated on its first page.
(2) the date for.....services.....to begin and be completed.
(3) a description of the.. .. services. . .. to be provided, and

(4) certification by the project director for the contracting agency, the head of the contracting agency..... that sufficient funds are available in an appropriation to be encumbered for the amount of the contract.

Section 36.30.300 Sole source procurements

(a) A contract may be awarded for. . . . services,....w/out competitive sealed bidding, competitive sealed proposals, or other competition in accordance with regulations . . . . A contract may be awarded under this and only when the chief procurement officer or,.....determines in writing that there is only one source for the required procurement. . . A sole source procurement may not be awarded if a reasonable alternative source exists.

(c) The procurement officer shall negotiate with the single supplier to the extent practicable, to obtain a contract advantageous to the state.

(d) Procurement requirements may not be artificially divided, fragmented, aggregated, or structured so as to constitute a purchase under this and/or to circumvent the source selection procedures required.

36.30.305 Limited competition procurements

(a) A contract for. . . . services,....under $100,000 may be awarded without competitive sealed bidding/competitive sealed proposals in accordance with regulations adopted by the commissioner of administration.

36.30.310 Emergency procurements

- Okay when there is a threat to public health, welfare, or safety, when a situation exists that makes a procurement through competitive sealed bidding or competitive sealed proposals impracticable or contrary to the public interest,.... Must be a written determination.

36.30.324 Use of Alaska products

- Alaska products shall be used whenever practicable in procurements for an agency.

36.30.330 Penalty for failing to use designated products

(a) If a successful bidder/offeror who designates the use of an Alaska product in a bid/proposal for a procurement for an agency fails to use the designated product for a reason within the control of the successful bidder/offeror, each payment under the contract shall be reduced according to statute.

ARIZONA

Uses IFBs. Uses RFPs if it is not practical or advantageous to use competitive sealed bids.

Ch. 23 41-2533 Single source items

(4) Competitive bidding for purchase of items in excess of $5,000 must be used even if the item to be purchased can be acquired from only one source; splitting a purchase must have a reasonable basis and may not be used to avoid the bidding requirements

(5) Splitting transactions: Requirement of competitive bidding is based on the cost of an item, not the method of payment, and the purpose for splitting a transaction into parts must be **reasonable, not just to avoid the bidding requirement.**

Ch. 23 41-2534 Competitive sealed bids

(A) If director determines in writing that the use of competitive sealed bidding is either not practicable or not advantageous to the state, a contract may be entered into by competitive sealed proposals. Director may provide by regulation that it is either not practicable or not advantageous to the state to procure specified types of services or materials by competitive sealed bidding, except that said method may not be used for construction contracts.

(B) Proposals shall be solicited through RFPs.

(C) Adequate public notice of request for proposals shall be given in the same manner as provided in **Section 41-2533.**

(D) Proposals opened publicly at time and place designated in the RFP. Name of each bidder and such other relevant information as specified by regulations shall be publicly read and recorded in accorded with regulations promulgated by the director.

(E) RFP shall state relative importance of price and other evaluation factors. Specific numerical weighting is not required

(F) As provided in the RFP, and under the regulations, discussions may be conducted with responsible bidders who submit proposals determined to be reasonably susceptible to being selected for award for purpose of clarification to assure full understanding of, and responsiveness to, the solicitation requirements. Bidders are entitled to fair treatment re: any opportunity for discussion and revision of proposals and revisions may be permitted after submissions and before award for purpose of obtaining best and final offers. There shall be no disclosure of any information derived from proposals submitted by competing bidders.

(G) Bidder awarded the contract will be the one most responsible whose proposal is determined in writing to be the most advantageous to the state taking into consideration evaluation factors set forth in the RFP. No other factors or criteria may be used in the evaluation

Section 41-2536 Sole source procurement

- A contract may be awarded for a..... service . . . . item w/out competition if the director determines in **writing** that there is only one source for the required.....service . . . . item. Director may require the submission of cost or pricing data in connection with an award under this Section. Sole source procurement shall be avoided, except when no reasonable alternative sources exist. Written determination of the basis for same shall be included in the contract file.

Section 41-2537 Emergency procurements

- The director may make/authorize others to make emergency procurements if there exists a threat to public health, welfare, or safety or if a situation exists which makes compliance with **41-2534** impracticable, unnecessary or contrary to the public interest as defined in regulations promulgated by the director, **except** that such emergency procurements shall be made with such competition as is

practicable under the circumstances. Written determination of the basis for the emergency and for the selection of the particular contractor shall be included in the contract file.

Section 41-2539 Cancellation of invitation for bids or requests for proposals

- An invitation for bids, an RFP/other solicitation may be canceled/any or all bids/proposals may be rejected in whole/in part as may be specified in the solicitation if it is in the best interests of the state. Reasons for cancellation/rejection shall be made part of the contract file.

Section 41-2540 Responsibility of bidders and offerors

(A) A written determination of nonresponsibility of a bidder. . . shall be made in accordance with regulations. Unreasonable failure of a bidder . . . to promptly supply information in connection with an inquiry re: responsibility shall be grounds for a determination of nonresponsibility with respect to the bidder . . . Finding of nonresponsibility shall not be construed as a violation of the rights of any persons.

Section 41-2541 Prequalification of contractors

- Prospective contractors may be requalified for particular types of . . . services Prospective contractors have a continuing duty to provide the director with information on any material change affecting the basis of prequalification. Solicitation mailing lists of potential contractors shall include the prequalified

- Contractors. Added by Laws 1984, Ch. 251, 2, eff. Jan. 1, 12985. amended by Laws 1985, Ch. 290, 7 eff. May 3, 1985.

Section 41-2542 Bid and contract security

- Director may require, in accordance with regulations the submission of security to guarantee faithful bid and contract performance. In determining the amount and type of security required for each contract, the director shall consider the nature of the performance, and the need for future protection to the state. Requirement for security must be included in the invitation for bids or RFPs

Section 41-2544 Types of contracts

- Any type of contract which will promote the best interest of the state may be used, except that the use of a cost plus a percentage of cost contract is prohibited.

Section 41-2546 Multi-term contracts

(A) Unless otherwise provided by law, a contract for. . . . services may be entered into for a period of time up to 5 years, as deemed to be in the best interest of the state, if the terms of the k and conditions of renewal/extension, if any, are included in the solicitation and monies are available for the first fiscal period at the time of contracting. Contract time period may exceed 5 years if under regulations the director determines in writing that such a contract would be advantageous to the state.

(B) Before use of multi-year contract, it shall be determined in writing that:

(1) Estimated requirements cover the period of the contract and are reasonable and continuing.

(2) The contract will serve the best interest of the state by encouraging effective competition or otherwise promoting economies in state procurement.

(C) If monies not appropriated/otherwise made available to support continuation of performance in a subsequent fiscal period, the contract shall be canceled and the contractor may only be reimbursed for reasonable value of any nonrecurring costs incurred but not amortized in the price of.....services delivered under the contract or which are otherwise not recoverable. Cost of cancellation may be paid from any appropriations available for such purposes.

Section 41-2549 Reporting of anticompetitive practices

- If for any reason collusion/other anti-competitive practices are suspected among any bidders, a notice of relevant facts shall be transmitted to the director and the attorney general.

ARKANSAS

Uses IFBs.

H.B. 1002-ACT No. 482 (1979 Arkansas General Assembly & 29

- The contract shall be awarded with responsible promptness by written notice to the lowest responsive and responsible bidder whose bid meets the requirements and criteria set forth in the IFBs.

CALIFORNIA

Uses IFBs.

Bid, General Provisions Section 9

- **Award of contracts:** Contracts and purchases will be made or entered into with the lowest responsible bidder meeting specification, except as otherwise specified in the IFBs.

COLORADO

Uses IFBs. RFP is used when it is not practical or advantageous to use an IFB.

Vol. 10B Title 24 & 42-103-202 Competitive sealed bidding:

(1) Contracts shall be awarded by competitive sealed bidding except as otherwise provided in 24-103-202.

(2) An invitation for bids shall be issued and shall include a purchase description and all contractual terms and conditions applicable to the procurement.

(3) Adequate public notice of invitation for bids shall be given a reasonable time. Notice may include publication in a newspaper of general circulation.

(4) Bids shall be opened publicly in the presence of one or more witnesses at the time and place designated in the invitation for bids. Amount of bids to be placed in the record.

(5) Bids unconditionally accepted, except as authorized by sub & 7 (see below). Bids evaluation based on invitation to bid in IFB, which may include criteria to determine acceptability such as

(1) inspection,
(2) testing,
(3) quality,
(4) workmanship,
(5) delivery, and
(6) suitability for a particular purpose.

- **Criteria that will affect the bid price and be considered in the evaluation for award shall be objectively measurable,** such as

(1) discounts,
(2) transportation costs, and
(3) total or life cycle costs.

No criteria may be used in bid evaluation that are not set forth in the IFB.

(6) Withdraw of inadvertently erroneous bids before award may be permitted pursuant to rules if the bidder submits proof of evidentiary value which clearly and convincingly demonstrates that an error was made. Such bid mistakes shall be supported by a written determination made by the state purchasing director or the head of a purchasing agency.

(7) Contract shall be awarded with reasonable promptness by written notice to low responsible bidder whose bid meets the requirements and criteria set for in the IFB. if all bids exceed available funds head of purchasing agency is authorized, in situations where time or economic consideration preclude resolicitation of work of a reduced scope, to negotiate an adjustment of the bid price with the low responsible bidder in order to bring the bid within the amount of available except that the functional specification integral to completion of the project may not be reduced in scope, taking into account the project plan, design, and specifications and quality of materials.

(8) When it is impractical to initially prepare a purchase description to support an award based on price, an RFP may be issued requesting the submission of unpriced offers to be followed by an RFP limited to those bidders whose offers have been qualified under the criteria set forth in the first RFP.

Section 24-103-204 Small purchases

- Any procurement not exceeding the amount established by rule may be made in accordance with small purchase procedures established by rules, but procurement requirements shall not be artificially divided so as to constitute a small purchase under this Section.

Section 24-103-205 Sole source procurement

- A contract may be awarded for a.....service without competition when, under rules, the state purchasing director, the head of a purchasing agency, or a designee of either officer who is in a higher ranking employment position than a procurement officer determines in writing that there is only one source for the required. .. . service.....

Part III Section 24-103-301 Cancellation of invitations for bids or requests for proposals

- An invitation for bids, an RFP/any other solicitation may be canceled/any or all bids/proposals may be rejected in whole/in part as may be specified in the solicitation when it is in the best interest of the state pursuant to rules. The reasons shall be made part of the contract file.

Part 4 Qualifications and duties Section 24-301-401 Responsibility of bidders and offerors

(1) Unreasonable failure of a bidder/offeror to promptly supply information in connection with an inquiry with respect to responsibility may grounds for a determination of nonresponsibility with respect to such bidder/offeror.

(2) Information furnished by a bidder/offeror pursuant to this Section shall not be disclosed outside of the division of purchasing/the purchasing agency w/out prior written consent by the bidder/offeror.

Section 24-301-403 Prequalification of suppliers

- Prospective suppliers may be prequalified for particular types of supplies, services..... and the method of compiling and soliciting from such mailing lists of potential contractors shall be pursuant to rules.

Part 5 Types of Contracts

Section 24-301-501 Types of contracts

- Any type of contract which will promote the best interests of the state maybe used; except that the use of a cost plus a percentage of cost contract is prohibited. A cost reimbursement contract may be used only when a determination is made in writing that such a contract is likely to be less costly to the state than any other type of contract or that it is impractical be to obtain the supplies, services,.....required unless the cost reimbursement contract is used.

Section 24-103-503 Multi-year contracts

(1) Unless otherwise provided by law, a contract for supplies or services may be entered into for any period of time deemed to be in the best interest of the state, if the terms of the contract and conditions of renewal or extension, if any, are included in the solicitation and if funds are available for the first year at the time of contracting. Payment and performance obligations for succeeding fiscal years shall be subject to availability and appropriation of funds.

(2) Prior to using multi-year contracts, it shall be determined in writing that:

(a) Estimated requirements cover the period of the contract and are reasonably firm and continuing; and

(b) That such a contract will serve the best interests of the state by encouraging effective competition or otherwise promoting economies in state procurement.

(3) When funds not appropriated/otherwise made available to support continuation of performance in a subsequent fiscal year, the contract shall be canceled, and the contractor may be reimbursed for the reasonable value of any nonrecurring costs incurred but not amortized in the price of the supplies or services delivered under the contract.

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(a) Estimated requirements cover the period of the contract and are reasonably firm and continuing; and

(b) That such a contract will serve the best interests of the state by encouraging effective competition or otherwise promoting economies in state procurement.

(3) When funds not appropriated/otherwise made available to support continuation of performance in a subsequent fiscal year, the contract shall be canceled, and the contractor may be reimbursed for the reasonable value of any nonrecurring costs incurred but not amortized in the price of the supplies or services delivered under the contract.

Part 7 Determinations and reports

Section 24-103-702 Reporting of anticompetitive practices

When for any reason collusion or other anti-competitive practices are suspected among any bidders/offerors, a notice of the relevant facts shall be transmitted to the attorney general.

CONNECTICUT

Uses IFB or RFP. Are awarded on basis of which seems most advantageous to the state based on which criteria are valid.

Section 4-114: Award of Contracts (Text of amended by 1988, P.A. 88-18 and by 1988, P.A. 88-231, 2.)

All bids submitted shall be based on such standard specifications as may be adopted by the standardization committee. All open market . . . . . orders of contracts shall be awarded to

(1) the lowest responsible qualified bidder,
(2) the qualities of the articles to be supplied,
(3) their conformity with the specifications,
(4) their suitability to the requirements of the state government and
(5) the deliver terms being taken into consideration and,
(6) at the discretion of the commissioner of administrative services, trade-in or resale value of the articles may be considered where it appears to be in the best interest of the state.

All other factors being equal, preference given to materials produced, assembled or manufactured in the state and services originating and provided in the state.

If bidder refuses to accept, within 10 days, a contract awarded to him, such contract may be awarded to the next lowest responsible qualified bidder, and so on until such contract is awarded and accepted.

If all bids received on a pending contract are for the same unit price and equipment produced, assembled or manufactured. in the state or services originating and provided in the state, the commissioner shall have
authority to order the rejection of all bids and to order the purchase of the required supplies or contractual services in the open market, provided the price paid in the open market shall not exceed the bid price.

DELAWARE

Delaware, CH29, Section 6903;

Uses IFBs.

(e) If the probable cost of the work is estimated to exceed $10,000, the contract shall be made only after public advertising and the receipt of sealed bids.

(h) An agency may purchase used equipment or buildings by negotiations, rather than by competitive bidding if it is demonstrated to the satisfaction of the Department of Administrative Services of the State or the purchasing supervisor of any county that the negotiated price is reasonable for the intended use.

(k) The Delaware Transportation Authority is specifically excepted from the requirements of this subsection which requires that all state departments and agencies within the Executive Branch of the state government shall procure all gasoline through the statewide contract awarded by the Division of purchasing.

Section 6907 Opening of bids; award of contracts; right to reject bids

Bids shall be **publicly opened** at the **time and place specified** and the contract shall be **awarded w/in 30 days** by the agency or a representative delegated by the agency, except in the case of a public school district. Its contract shall be awarded within 60 days. Lowest bidder, unless in the opinion of the agency or its delegated representative the interest of the State or the contracting county shall be better served by the awarding of the contract to some other contractor, which may then be done, provided the agency shall set down in its minutes the reason(s) for granting to same, and clearly describing how the interest of the State or the contracting county shall be better served by said alternative award.

Criterion for determination:

Unsatisfactory performances on any previously awarded contract by the vendor being rejected. If two or more responsible vendors shall bid an equal amount and such amount shall be the lowest bid, the agency or its delegated representative may award the contract to any one of them. The agency or its delegated representative may reject all bids (29 Del. C. 1953, 6908; 54 Del. Laws, c 137, 1; 634 Del. Laws, c. 15; 63 Del. Laws, c. 136, 7; 65 Del. Laws, c. 502, 1; 66 Del. Laws, c. 15, 1; 63 Del. Laws, c. 136, 7; 65 Del. Laws, c.502, 1; 66 Del. Laws, c. 347, 1).

Section 6909: Performance and Payment Bonds:

(a) The successful bidder shall execute a good and sufficient bond to the State or the contracting county for the benefit of the agency, with corporate surety authorized to do business in the State, in a sum equal to 100% of the contract price, except as otherwise provided in this section, and further providing that in a contract for the purchase of material or in the execution of maintenance contracts as defined here, the agency may reduce or waive such bond requirement from the successful bidder, if such reduction or waiver has been stated in the bid specifications.

(f) In event of default of its contractor the money collected on the performance bonds shall be used by the DOT for the projects for which the performance bonds were issued.

(g) In addition to the bond, letter of credit, or other financial security posed by the successful bidder in conjunction with the execution of the formal contract, each successful bidder, regardless of type of security posed or waived, **must purchase adequate insurance for the performance of the contract** and, by submission of a bid, **agrees to indemnify** and save harmless and to defend all legal or equitable actions brought against the State, any agency, officer, and/or employee of the State, for and from all claims of liability the result of the successful bidder's actions during the performance of the contract.

Purchase/nonpurchase of insurance/involvement of successful bidder in any legal or equitable defense of action brought against him based upon work performed pursuant to the contract, **will not waive any defense** which the State, its agency, the contracting county and their respective officers and employees might otherwise have to such claims, specifically including the defense of sovereign immunity where applicable, the State, contracting county and all agencies officers and employees shall not be financially responsible for the consequences of work performed, pursuant to said contract.

(h) Contracts for purchase valued at $50,000 and identified in the specifications by the State or the contracting county, may contain a waiver of the bond requirement, provided that the successful bidder post with the State of contracting county an irrevocable letter of credit/other suitable or readily collectible financial security for the project.

Section 6912 Wage provisions in public construction contracts: failure to pay prevailing wage rates; penalty.

(d) Any. . . . or mechanic employed by any (sub)contractor, on behalf of any. . . . mechanic employed by any (sub)contractor, **paid in a sum less than the prevailing wage rates** provided for **shall have a right of action against the (sub)contractor** in the Superior Court **to recover the difference between** the amount so paid and the prevailing wage rate plus interest at 6%/annum. It will **not be a defense** to such action that underpayment was received by the mechanic w/out protest, either oral/in writing, against the amount, and the lack or failure/protest shall not be a bar to recovery.

FLORIDA

Uses IFBs.

Section 489.129 In the construction trade, the licensed general contractor was responsible for failure to supervise construction and for deliberate violation of specification codes. State, county, or city proof of workers' compensation coverage and evidence that the contractors' carrier or self insurer has current knowledge of the contractors intent to do business within this state.

GEORGIA

Uses both IFB and RFP. The Department of Administrative Services must approve if an RFP is used.

Section 40-1909 Advertisement for bids, competitive and sealed proposals

This section, set into place in 1989, incorporates Sections 40-1910, 40-1911.1, 40-1912, 40-1913, 40-1914, 40-1933).

(a) If the cost of the bid exceeds $5,000, sealed bids shall be solicited by advertisement in a newspaper of state-wide circulation at least once and at least 10 days prior to the date fixed for opening of the bids and awarding of the contract. Other methods, if they are more advantageous, for the particular item being purchased may be adopted.

(1) If sealed bidding is not advantageous, the Dept. of Administrative Services must approve the alternative method of solicitation only after a written determination.

(2) Proposals **must** still be solicited through RFP.

(3) Adequate public notice of RFP **must** be given in the same manner as provided for in competitive sealed bidding.

(4) Proposals shall be opened in the same manner as competitive sealed bids. A register of proposals **must** be prepared and made available for public inspection.

(5) Request for proposals shall state relative importance of price and other evaluation factors.

(6) All bidders shall be accorded fair and equal treatment with respect to opportunities for discussion and revision of proposals. Such revisions may be permitted after submissions and prior to award for the purpose of obtaining best and final offers.

(7) Award shall be made to responsible bidder whose proposal is determined in writing to be the most advantageous to the state, taking into consideration price and the evaluation factors set forth in the RFP. **No other factors/criteria shall be used in the evaluation.**

(b) Awards, whenever possible, will be based upon competitive bids and awarded to lowest **responsible** bidder, **taking into consideration** the

(1) quality of the articles to be supplied and
(2) conformity with the standard specifications which have been established and prescribed,
(3) the purposes for which the articles are required,
(4) the discount allowed for prompt payment,
(5) the transportation charges, and
(6) the date of delivery specified in the bid.

(c) When bids received are unreasonable or unacceptable as to terms and conditions are noncompetitive, **or** the low bid exceeds available funds **and** it is determined in writing by the Dept. of Administration Service that time or other circumstances will not permit the delay required to re-solicit competitive bids, a contract may be negotiated pursuant to this Code section, provided each responsible bidder who submitted such a bid under the original solicitation is notified of the determination and is give a reasonable opportunity to negotiate. Where bids received are noncompetitive or low bid exceeded available funds, negotiated price shall be lower than the lowest rejected bid of any responsible bidder under the original solicitation.

(d) On all sealed bids the following certificate of independent price determination shall be used: I certify that this bid is made w/out prior understanding, agreement, or connection with any corporation, firm or person submitting a bid for the same materials, supplies, or equipment and is in all respects fair and without collusion or fraud. I understand collusive bidding is a violation of state and federal law and can result in fines, prison sentences, and civil damage awards. I agree to abide by all conditions of this bid and certify that I am authorized to sign this bid for the bidder."

Section 40-1910 Competitive bids; lowest bid to be accepted.

All contracts for the purchase of supplies, materials, or equipment made under the provisions of this Chapter shall, wherever possible, be based on competitive bids and shall be awarded to the lowest responsible bidder, **taking into consideration** the quality of the articles to be supplied and conformity with the standard specifications which have been established and prescribed, the purposes for which articles are required, the discount allowed for prompt payment, the transportation charges and the date/of delivery specified in the bid.

Section 40-1911 Rules for competitive bidding

Competitive bids on contracts shall be received in accordance with rules and regulations to be adopted by the Dept. of Administrative Services, which rules and regulations. shall prescribe,

(1) the manner,
(2) times and
(3) places for proper advertisement for bids, indicating the
(4) time and
(5) place when such bids will be received,
(6) the article for which bids shall be submitted, and the
(7) standard specifications

(8) the bids are to be made, and
(9) the amount, if any, of bonds or certified checks to accompany the bids.

Any and all bids so received may be rejected.

Section 40-1913 Bids to be opened in public; bond of successful bidder

Department of Administrative Services shall canvas bids and award contracts according to terms of this Chapter. **Proper bond** for the faithful performance of any contract **shall be required** of successful bidder in the discretion of the Department of Administration Services.

Section 40-1914.1 Competitive bids **not** required where amount of purchase is less than $500; purchases by State departments, agencies, and instrumentalities where amount of purchase is less than $500.

Section 40-1919 Officer purchasing personally liable

If agency purchases any materials contrary to the provisions of statute or rules and regulations, the executive officer of such agency shall be personally liable for the cost and if supplies are so unlawfully purchased and paid for out of State funds, the amount may be recovered in the name of the State in an appropriate action.

Section 40-1920 Preference to local sellers

Department of Administrative Services in awarding of contracts, all things being equal, shall give **preference to local sellers** of Georgia products **when** it is possible to do so and the interest of the State is not sacrificed, and the quality and prices permit it.

Section 40-1921.1 Construction contracts conducted by Department of Administration Services; advertising costs to be borne by.....agency conducting same; Dept of Administrative Services to carry out section.

All . . . . public works contracts, exceeding a total expenditure of $500 of any.....agency of the State Government, except as otherwise provided shall be conducted and negotiated by the Dept. of Administration Services. All advertising costs incurred in connection with contracts shall be borne by and paid from the funds appropriated to and available to the.....agency of the State Government for which said contract is negotiated.

Section 40-1925 Financial interest in purchases forbidden

Neither the Department of Administrative Services, nor any assistant, shall be financially interested, or have any personal beneficial interest either directly/indirectly, in the purchase of, or contract for any materials, nor in any association furnishing any such materials to the State government of any of its departments.

Uses IFBs.

Part II. Public Works and Contracts:

Vol. 2, Section 103-22 Advertisement for bids required: exceptions.

(a) No expenditure of public money where the sum to be expended is $8,000 or more shall be made except under contract let after public advertisement for sealed tenders, in the manner provided by law exceptions may not apply to contract maintenance for transit agencies.

(b) in all cases of expenditures of public money that is $4,000 but less than $8,000, a call for informal bids shall be published at least once in a newspaper of general circulation printed and published within the State.

Section 103-30: Forfeiture of deposits

If the bidder to whom the contract is awarded fails/neglects to enter into the contract and furnish satisfactory security, within 10 days after the award or within the time as the officer awarding the contract may allow, the officer shall pay the amount of the deposit into the treasury as a realization of the State, county, or other governmental agency, as the case may be.

Section 103-33 Termination of contract by contracting agency:

The contracting officer for any contract executed in accordance with statute may terminate the contract at any time or bar the contractor from bidding on any project let to bid for a period **not to exceed** one year when in the opinion of the contracting officer, the contractor has made unjustifiable and substantive changes from the conditions set forth in the contractor's original itemized bid; provided that the changes which are due directly to the failure, refusal, or inability of a sub-contractor named in the contractor's original itemized bid in accordance with Section 103-29 to enter into the sub-contract or because of the sub-contractors insolvency, inability to furnish a reasonable performance bond, suspension or revocation of the sub-contractor's license, or failure or inability to comply with other requirements of the law applicable to contractors, sub-contractors and public works projects shall not be deemed to be unjustifiable and substantive changes warranting termination of the contract by the contracting officer or for barring the contractor from bidding on future projects. **Upon termination, the contracting officer shall limit payment to the contractor to that part of the contract satisfactorily completed at the time of termination.** Re: barring contractors from bidding on future contracts, each contracting officer taking that action shall notify other contracting agencies of the action. (L 1963, c 185, pt of 2; Supp, 9-30-5; HRS 103-33; am imp. L 1984, c 90, 1; am L 1989, c 16, 1)

Section 103-34 Contractor's bond; conditions

(a) Prior to any contract, the party with whom the contract is proposed to be made shall give security for the performance by a good and sufficient bond conditioned for full and faithful performance of the contract in accordance with the terms and intent and also for prompt payment to all others for all labor and materials furnished by them to the party and used in the prosecution of the work provided for in the contract; **provided that the requirement does not apply** any price term, open end or requirements contract for materials under which the total amount to be paid to the contractor cannot be estimated at the time the contract is to be awarded. **Amount of bond:** up to 50% of the contract price including

amounts estimated to be required for extra work' in the case of a price term, open end, or requirements contract for labor under which the total amount to be paid for labor to the contractor cannot be accurately estimated at the time the contract is awarded, the bond amount shall be as designated in the bid documents; amounts estimated to be required for extra work must be included. Bond also by its terms must inure to the benefit of any and all persons entitled to file claims for labor performed/materials furnished to give them a right of action.

IDAHO

Uses IFBs.

IC 67-5716

Lowest Responsible bidder: The responsible bidder whose bid reflects the lowest acquisition price to be paid by the state; except that when specifications are valued or comparative performance examinations are conducted, the results of such examinations and the relative score of valued specification will be weighed as set out in the specifications, in determining the lowest acquisition price.

ILLINOIS

Uses IFBs.

Chapter 120, Para. 132.1, 6a Illinois Revised Statues

All purchases, contracts, and expenditures of funds shall be awarded to the lowest bidder considering conformity with

(1) specifications,
(2) terms of delivery,
(3) quality, and
(4) serviceability . .

INDIANA

Uses IFBs.

Burns Indiana Statutes Annotated, title 4, Article 13, Chapter 2, 11, 4-13-2-11

All contracts for construction or repairs and all purchases of and all contracts for supplies, materials, purchase or rental equipment, and contractual services covered by this act shall be based on competitive bids, and all awards shall be to the lowest and best bidder after advertising for bids as provided in statutes.

IOWA

Uses IFBs.

Code of Iowa, 1979 edition, Ch. 18.6 Pp. 72-73

Contracts for the purchase of items shall be awarded on the basis of the lowest competent bid. Contracts not based on competitive bidding shall be awarded on the basis of bidder competence and reasonable price.

KANSAS

Uses IFBs.

Section 75-3740 Competitive bids; in state preference on identical bids

(a) All contracts and purchases made by.....for which competitive bids are required shall be awarded to the lowest responsible bidder, taking into consideration conformity with the specifications, terms of delivery, and other conditions imposed in the call for bids.

(b) Director of purchases shall have power to decide as to the lowest responsible bidder of all purchases, but in cases where the dollar amount of bid received from lowest responsible bidder from within the state is identical to the dollar amount of the bid received from the lowest responsible bidder from without the state, the contract shall be awarded to the bidder from within the state.

KENTUCKY

Uses IFBs, but if not practical can use an RFP. Purchasing Officer determines in writing under rules issued by the Secretary when it is not possible to use competitive bidding.

Section 45A.080 Competitive sealed bidding

(1) Contracts exceeding the amount provided by statute ($5,000 for equipment replacement parts purchase by the transportation cabinet and$1,000 for all other purchases) shall be awarded by competitive sealed bidding unless determined in writing that this method is not practicable. Factors to be considered in determining whether competitive sealed bidding is not practicable shall include whether:

(a) specifications can be prepared that permit award on the basis of either the lowest bid price or the lowest evaluated bid price; and

(b) the available sources, time, and place of performance, and other relevant circumstances as are appropriate for the use of competitive sealed bidding.

(2) IFBs shall state whether award shall be made on basis of lowest bid price or lowest evaluated bid price. If the latter basis is used, the objective measurable criteria to be used shall be set forth in the IFBs.

(3) Adequate public notice of the lFBs shall be given a sufficient time prior to the date set forth for the opening of bids. Notice shall include publication in newspaper(s) of general circulation in the state as determined by the secretary of the finance and administration cabinet for all price contracts and purchase contracts estimated to exceed $10,000, not less than 7 days before date set for the opening of the bids.

(4) Bids shall be publicly opened at the time and place designated in the IFBs. Each bid, together with the name of the bidder, shall be recorded and be open to the public.

(5) The contract shall be awarded with responsible promptness by written notice to the responsive and responsible bidder whose bid is either the lowest bid price or lowest evaluated bid price.

(6) Correction/withdraw of bids may be allowed only to the extent permitted by regulations issued by the secretary.

Opinions of Attorney General

The IFBs shall be let on the basis of the lowest bid price; or on lowest evaluated bid price, and **only one basis can be used, not both,** because the prospective bidders must be allowed to bid on the same thing and using the identical method. (OAG 80-311).

When enacting this, requiring that bids be open to public inspection, the legislature did not contemplate IFB, only bids on advertised specifications. (OAG 83-256, 83-302)

Purpose of competitive sealed bids
R.G. Wilmott Coal Co. v. State Purchasing Comm'n, 246 Ky. 115,54 S.W.2d 634, 86 A.L.R. 127 (1932).
Held:

Quality of material was a factor in determining the best bid when standard of quality was not specified. Executions of bidder's bond did not dispense with consideration of probability of prompt, efficient, and faithful performance of the contract. The courts would intervene if the discretion of the commission regarding bids was exercised arbitrarily, dishonestly, or beyond its reasonable limits. Letting contracts to the lowest and best bidder was mandatory. the purchasing commissions had discretion to determine who was the lowest and best bidder. Lowest and best bidder' was at least as comprehensive a term as lowest responsible bidder, which applied to the business judgment, capacity, skill, and responsibility, of the bidder. Lowest bid might be determined by monetary standards with the dollar as the unit. **All else being equal,** the lowest bid must have been accepted.

Chapter 45A.085 Competitive negotiation

(1) When.....purchasing officer determines in writing that use of competitive sealed bidding is not practicable, . . . a contract may be awarded by competitive negotiation.

(2) Adequate public notice of IFB shall be given in same manner as provided for IFBs.

(3) Contracts may be competitively negotiated when determined in writing . . . that the bid prices received by competitive sealed bidding **either are** unreasonable as to all or part of the requirements or were not independently reached in open competition, and for which:

(a) each competitive bidder has been notified of the intention to negotiate and is given reasonable opportunity to negotiate; and

(b) the negotiated price is lower than the lowest rejected bid by any competitive bidder; and

(c) the negotiated price is the lowest negotiated price offered by any competitive offeror.

(4) The RFP shall indicate the relative importance of price and other evaluation factors.

(5) Award made to responsible offeror whose proposal is determined in writing to be the most advantageous to the Commonwealth, taking into consideration price and the evaluation factors set forth in the RFP.

(6) Written/oral discussions to be conducted with all responsible offerors who submit proposals determined in writing to be reasonably susceptible of being selected for award. Discussions shall not disclose any information derived from proposals and submitted by competing offerors. Discussions need not be conducted:

(a) re: prices, where such prices are fixed by law or regulations, except that consideration shall be given to competitive terms and conditions; or

(b) where time of delivery or performance will not permit discussions; or

(c) where it can be clearly demonstrated and documented from the existence of adequate competition or accurate prior cost experience with the particular supply, service, or construction that acceptance of an initial offer without discussion would result in fair and reasonable prices, and the RFP notifies all offerors of the possibility that award may be made on the basis of the initial offers.

Chapter 45A.090 Negotiation after competitive sealed bidding when all bids exceed available funds

(11 In event that all bids result in bid prices in excess of funds available. . . . and the chief purchasing officer determines in writing:

(a) there are no additional funds available from any source to permit an award to the lowest responsive and responsible bidder; and

(b) the best interest of the state will not permit the delay attendant to a resolicitation under revised specifications, or for revised quantities, under competitive sealed bidding as provided in statute, then a negotiated awarded may be made as set forth....

(2) Where there is more than one bidder, competitive negotiations shall be conducted with the three (3) two (2) if there are only two (2) bidders determined in writing to be the lowest responsible and responsible bidders to the competitive sealed bid invitation. Such negotiations shall be conducted under the following restrictions:

(a) all other potential offerors shall be afforded an opportunity to take part in such discussions;
(b) an RFP, based on revised specifications or quantities, shall be issued as promptly as possible, shall provide for an expeditious response to the revised requirements and shall be awarded upon the basis of the lowest bid price or lowest re-evaluated bid price submitted by any responsive and responsible offeror.

(3) Where after competitive sealed bidding it is determined in writing there is only one responsive and responsible bidder, a noncompetitive negotiated award may be made with such a bidder in accordance with **Ch. 45A.095** (see below).

Chapter 45A.095 Noncompetitive negotiation

A contract may be made only when competition is not feasible, as determined by the purchasing office in writing prior to award, under regulations issued by the Secretary of the Finance and Administration Cabinet and emergency purchases may be made pursuant to statute.

Chapter 45A.100 Small purchases

(2) Procurement requirements shall not be artificially divided so as to constitute a small purchase under this statute. **At least every two years**, the Secretary shall review the prevailing costs of labor and materials and may make recommendations to the next regular session of the general assembly for the revisions of the then current maximum small purchase amount a justified by intervening changes in the cost of labor and materials.

Chapter 45A.105 Cancellation of IFBs or RFPs

An IFB, an RFP, or other solicitation may be canceled , or all bids/proposals rejected, if it is determined in writing that such action is taken in the best interest of the Commonwealth and approved by the purchasing officer.

Chapter 45A.115 Prequalification of suppliers

.....may provide for prequalification of suppliers as responsible prospective contractors for particular types of supplies, services ....Solicitations mailing lists of potential contractors shall include but not be limited to such prequalified suppliers . Prequalification shall not foreclose a written determination:

(1) between the time of the bid opening or receipt of offers and the making of an award, that a prequalified supplier is not responsible or

(2) that a supplier who is not prequalified at the time of bid opening or receipt of offers if responsible.

Chapter 45A.120 Cost or pricing data - Price Adjustment

(1) A contractor shall submit cost in pricing data and shall certify that, to the best of his knowledge and belief, his submitted bid was accurate, complete, and current as of mutually determined specified date prior to the date of:

(a) the pricing of any negotiated contract where the total contract price is expected to exceed $50,000; or

(b) pricing of any change order/contract modification which is expected to exceed $25,000, or such lesser amount ....

Chapter 45A.125 Cost plus contract prohibited

Shall not be used.

Chapter 45A.130 Cost reimbursement contracts

(1) No contract providing for the reimbursement of the contractors cost plus a fixed fee may be made unless it is determined in writing by the Secretary of the Finance and Administration Cabinet that such contract is likely to be less costly to the state than any other type of contract, or that it is impracticable to obtain supplies or services of the kind or quality required except under such a contract.

Chapter 45A.145 Multi-year contracts

(1) Unless otherwise provided in statute, multi-year contracts for supplies and services may be entered into for periods not extending beyond the end of the biennium in which the contract was made, if funds for the first fiscal year of the contemplated contract are available at the time of contracting. Payment and performance obligations for succeeding fiscal years shall be subject to the availability of funds. Must serve best interests of the state.

Chapter 45A.200 Contract adjustment clauses - Termination clause (Applies to construction contracts)

(1) If expected to exceed $50,000 shall specify clauses providing for adjustments to contract terms and conditions where there has been:

(a) a unilateral change ordered by the state; or

(b) variation in estimated quantities in a contract providing for estimated quantities; or

(c) a unilateral suspension of work by the state.

Damages: Relevant Case Law, Kentucky

Waiver of Immunity:

All-American Movers, Inc. v. Commonwealth ex rel. Hancock, 552 S.W.2d 679 (Ky. Ct. App. 1977).

Held: One cannot sue the commonwealth on a claim unless sovereign immunity has been waived, as it has been on lawfully authorized written contracts.

Oral Contracts:

All-American Movers, Inc. v. Commonwealth ex rel. Hancock, 552 S.W.2d 679 (Ky. Ct. App. 1977).

Held: Where there has been no allegation or proof that the regulations. have been complied with, alleged oral contract for services . . . was void as contrary to public policy and the commonwealth can recover payments made to. . . in excess of amount provided for in written contract.

Action by Assignee

Fidelity & Cas. Co. v. Commonwealth ex rel. Christen, 445 S.W.2d 113 (Ky. Ct. App. 1969).

Held: When the Commonwealth paid a for work done instead of the assignee after the commonwealth had accepted the assignment, the assignee had a right to maintain an action for the amount paid to the contractor and the **commonwealth was not protected** by sovereign immunity.

Valid cause of action

Commonwealth Department of Education. v. Gravitt, 673 S.W.2d 428 (Ky. Ct. App. 1984).

Held: Document in which Department of Education promised to modify van of quadriplegic in exchange for his acceptance of five conditions, some of which would transfer title to the department

should the quadriplegic fail to abide by Departments directions constituted a **lawfully authorized contract between Department and quadriplegic** and since nothing in statute prohibited such contract, **quadriplegic had valid cause of action against Department** under this section for major defects which occurred as a result of the modification.

Chapter 45A.290 Effect of protest

- In event of protest timely filed under statute, the Commonwealth shall not proceed further with the solicitation or award involved, until the secretary of finance and . . . .or his designee, makes a written and adequately supported determination that continuation of the procurement is necessary to protect substantial interests of the Commonwealth.

Chapter 45A.325 Collusion to restrain bids is prohibited

- Any agreement or collusion among bidders/prospective bidders which restrains, tends to restrain, or is reasonably calculated to restrain competition by agreement to bid at a fixed price, or to refrain from bidding or otherwise is prohibited.

Chapter 45A.365 Competitive sealed bidding

(1) All contracts/purchases shall be awarded by competitive sealed bidding, except as otherwise provided by statute.

(2) IFBs shall state whether the award shall be made on basis of lowest bid price or lowest evaluated bid price. If the latter is used, the objective measurable criteria to be utilized shall be set forth in the IFBs.

(3) Public shall be given notice of the IFBs for advertisement in the newspaper of largest circulation in the local jurisdiction **at least once** not less than seven (7) days nor more than twenty-one (21) days before date set for opening of bids. Adds shall include time and place bids will be opened and tine and place where specifications may be obtained.

(4) Bids shall be opened publicly at time and place designated in the IFBs. Each bid, and name of bidder, shall be recorded and be open to public inspection.

(5) Contract shall be awarded with reasonable promptness by written notice to responsive and responsible bidder whose bid is either the lowest bid price or the lowest evaluated bid price.

(6) Local public agency may allow withdrawal of a bid where

(1) there is a patent error on the face of the bid document, or
(2) where bidder presents sufficient evidence, substantiated by bid worksheets, that the bid was based upon an error in formulation of the bid price.

LOUISIANA

Uses IFBs.

R.S. 39.1594, except as provided in R.S. 39.1595 through R.S. Section 39.1958 (R.S. 39.1593).

- Unless otherwise provided by law, all state contracts shall be awarded by competitive sealed bidding, pursuant to statute.

MAINE

Uses IFBs.

Section 1816 Purchases

(2)(a) May be waived if services required involve the expenditure of less than $250 or $1,000 or less for purchases by.... and the interest of the State would best be served.....

(B) In the opinion of the Governor an emergency exists of a nature which requires the immediate procurement of services. ... The State Purchasing Agent may be authorized by the Governor to make purchases without the formality of competitive bidding.

(C) Required item is procurable by the State from only one source.

(3) **Competitive bidding defined:** transmission of a written or oral proposal or IFB to at least three responsible suppliers to be replied to at a stated time.

(7) Award to lowest bidder. taking into consideration

(a) the qualities of services
(b) their conformity with the specifications
(c) the purposes for which they are required,
(d) the date of delivery and
(e) the ultimate cost to the State.

- Purchase made to best secure the greatest possible economy consistent with the grade/quality of services,....best adapted for purposes for which they are needed.

(8) **Tie bids**. resolved on basis of factors deemed by. . . . to serve the best interests of the State or by the drawing of lots, provided that price, quality, availability, and other factors being equal, contracts or.... shall be awarded to the in-state bidder/to bidder offering commodities produced/manufactured in the State.

(9) In-state bidder defined - one having its principal place of business, or a branch located in the state.

Note: Lowest responsible bidder, Maine

Cutler Co.. v. State Purchasing Agent, 472 A.2d 913 (Me., 1984).

Held: State Purchasing Agent could reasonably take into account additional capabilities of photocopying machines offered by competing supply company in awarding contract, as state is only required by this Section to award the contract to the lowest responsible bidder, taking quality into consideration.

Note also:

Op. Att'y. Gen., Jan. 17, 1980 State Purchasing Agent, with approval of Commissioner of Finance and Administration, was authorized by statute to promulgate such rules and regulations as were necessary to implement competitive bidding system and had authority to promulgate regulation establishing under what circumstances vendor would not be considered "responsible" bidder as required by this section.

Note also: Interpretation of bids

Cutler Co.. v. State Purchasing Agent, 472 A.2d 913 (Me., 1984).

Held: State Purchasing Agent's interpretation of bid by photocopying machine supplier, in determining the lowest responsible bidder, as meaning that price would be 2.4 cents/copy for the first 600,000 copies each month rather than 2.4 cents/copy only for the first 600,000 made for the duration of the lease was reasonable, where the state's estimate of copies needed was a monthly estimate, billing was to be monthly, and contract could have been extended for 3 years.

MARYLAND

Uses both RFP and IFB. **RFP may be used if**

Procurement officer, with approval of the unit head, determines cannot be based on lowest bid, and the head of the unit determines there is a sufficient reason to override the general policy, and that the IFB is not advantageous or practical to the state.

Methods of Source Selection

Section 13-101 Definitions

(b) **Evaluated bid price**: the price of a bid after adjustment in accordance with objective measurable criteria.

(c) **Objective measurable criteria**

(1) standards that enable the State to compare the economy, effectiveness, or value of the subject of the bids.
(2) includes standards of reliability, operational costs, maintainability, useful life, and residual value.

Note: See University of Baltimore Law Review article:

Fair Treatment for Contractors Doing Business with the State of Maryland, 15 U. Balt. L. Rev. 215 (1986).

Note also:

Waiver of sovereign immunity in contract cases is not limited to procurement contracts. QC Corp. v. Maryland Port Admin., 68 Md. App. 181, 510 A.2d 1101 (1986).

Note also:

Attendance at pre-bid or pre-proposal conference. While a **solicitation provision** strongly encouraging attendance at a pre-bid or pre-proposal conference is **permissible**, neither the solicitation or the published or unpublished solicitation notice may mandate such attendance. 72 Op.Att'y. Gen. - (March 3, 1987).

Note also:

A bidder's failure to attend a "mandatory" pre-bid conference may result in rejection of its bid only if that absence affects responsiveness or responsibility. 72 Op. Any. Gen. - (March 3, 1987).

Section 13-102 Available methods

Section 13-103 Competitive sealed bids

(a) Invitations For Bids

(1) Whenever procurement is based on competitive sealed bids, a procurement officer shall seek bids by issuing an IFB.

(2) the IFB shall include:

(i) specifications of the procurement contract;
(ii) whether the procurement contract will be awarded based on the lowest bid price, the lowest evaluated bid price or, if the procurement is subject to statute, the bid most favorable to the State.
(iii) if Procurement contract is based on evaluated bid price, objective measurable criteria by which lowest evaluated bid price will be determined.
(iv) small business preferences.

(b)(2) **Multi-step sealed bids**

(1) whenever a procurement officer determines that an initial preparation of specifications for price bids is impracticable, the IFBs may:

(i) include a request for unpriced technical offers or samples; and
(ii) direct bidders to submit price bids;
(1) with the unpriced technical offers or samples; or
(2) after the unit evaluates the technical offers or samples and finds they are acceptable under criteria set forth in the IFBs.

(c) **Public notice of IFBs**

(1) a unit shall give public notice of an IFB before bid opening in accordance with statute.

(2) reasonable notice at least 10 days before bid opening

(3) publish notice in the Maryland Register at least 20 days before bid opening if:

(i) procurement officer reasonably expects bid prices to exceed $25,000 and
(ii) at least part of the contract is to be performed in the state or in the District of Columbia.

(4) Notice may also be published:

(ii) on a bid board
(iii) in a newspaper, periodical, or trade journal.

(h) Public notice of award - Not more than 30 days after execution and approval of contract shall be published in the newspaper.

Section 13-104 Competitive sealed proposals

- Does not apply to maintenance contracting

Section 13-107 Sole source procurement (are subject to approval by Attorney General) Must also be approved by the Department of Budget and Fiscal Planning;

MASSACHUSETTS

- No criteria set forth

MINNESOTA

Section 473.406 Certain procurement contracts

MISSISSIPPI

Section 31-7-47 Preference to resident contractors

- Preference to resident contractors and a nonresident bidder domiciled in a state having laws granting preference to local contractors shall be awarded Mississippi public contracts only on the same basis as the nonresident bidder's state awards contracts to Missouri contractors bidding under similar circumstances. Resident contractors actually domiciled in Mississippi, be they corporate, individuals, or partnerships, are to be granted preference over nonresidents in awarding of contracts in the same manner and to the same extent as provided by laws of the state of domicile of the nonresident.

MISSOURI

Section 34-040 Purchases to be made on competitive bids - standard specifications

- All purchases shall be based on competitive bids, except that the commissioner may make purchases of less than $100 on the open market. On any purchase where the estimated expenditure shall be $10,000 or over, the commissioner of administration shall advertise for bids in at least two daily newspapers of general circulation in such places as are most likely to reach prospective bidders at least five days before bids are to be opened. On purchases where estimated expense is less than $10,000, bids shall be secured without advertising. In all cases, the commissioner of administration shall post a notice of the proposed purchase on a bulletin board in his office. Shall also, on all purchases estimated to exceed $2,000 solicit bids by mail from prospective suppliers. The contract will go to the lowest and best bidder. Purchasing agent has the right to reject any/fall bids and advertise for new bids/with the approval of the governor, purchase the required supplies on the open mkt if they can be so purchased at a better price. All bids shall be based on standard specifications wherever such specifications have been prepared by.....as provided in state statute. Purchasing agent makes rules governing delivery, inspection.....of all supplies so purchased .... He shall determine amount of bond or deposit and the character.....which shall accompany the bids.

Section 34-070 Preference to Missouri products and firms

Note of decisions. Construction and application. Op. Att'y. gen. No. 17, Clavin,
Section 4-19-50 has been withdrawn by letter of the Att'y Gen. Dec. 11, 1970. The purchasing agent is required to determine whether bids for supplies to be purchased by the state show that the delivered price of a firm corporation or individual not doing business as a Mo. firm, corporation, or individual is same or less than bid of a Mo. firm, corp.....and if he determines that a Mo. bidder has submitted an equal bid, in competition with an out of state bidder, then..... is not permitted to accept a higher bid from a Mo. bidder on grounds that the economic interest of state would be furthered by patronizing a bidder doing business as a Missouri firm.....Op. Att'y, Gen. No. 452, Murray. 12-9-70.
(**Translation**: when quality of performance promised is equal or better and the price quoted is the same or less, use Missouri firm.

MONTANA

Uses IFBs.

Law review article: Montana Legislative Summary; 1961:
Resident Preference in Awarding Contracts, 22 Mont. L. Rev. 125 (1961).

Section 18-1-102 State Contracts to lowest resident bidder

- 1987 Amendment..... in awarding contracts for.....and public works of all kinds, it shall be the duty of each . . . . individual charged with responsibility for the execution of the contract on behalf of the state, ...to award such contract to the lowest responsible bidder who is a resident of the state of Montana and **whose bid is not more than 3% higher** than that of the lowest responsible bidder who is a nonresident of the state.

(4) The above requirement applies whether the law requires advertisement for bids or does not, and it shall apply to contracts involving funds obtained from the federal government unless expressly prohibited by the laws of the United States or regulations adopted pursuant.

- **Responsible bidder interpreted:** does not refer to pecuniary responsibility only but includes

  (1) judgment,
  (2) skill,
  (3) ability,
  (4) capacity, and
  (5) integrity.

  - Officers entrusted with duty of awarding a contract to same must exercise official discretion in determining the question. They **cannot be compelled by mandamus** to award a contract to a particular bidder merely because he has offered the lowest bid or tendered a sufficient bond.

See State ex rel. Eaves v. Rickards,16 Mont. 145,40 P. 216 (1895).

Attorney General's Opinions

- **Preference for Resident bidder Construed:** When a bid involves

  (1) a resident using out of state materials,
  (2) a resident using in state materials, and
  (3) a nonresident as the three lowest bidders, the resident bidder preference would **not** require awarding the bid to the resident using in state materials if his bid was more than 3% higher than the lowest responsible nonresident bidder, 40 Att. Gen. Op. 79 (19841.

Law Review Article:

Awarding Public Works Contracts: Granting Preference to Resident Bidders: Galesburg Construction Co. v. Board of Trustees, 641 P.2d 745 (Wyo), Metzke, 18 Land & Water L. Rev. 393 (1983).

See also:

Rights and remedies of bidder for public contract who has not entered into a contract, where bid was based on his own mistake of fact or that of his employees. 52 ALR2d 792, superseded by 2 ALR, 4th 99.

- Differences in character or quality of materials, articles, or work a affecting acceptance of bid for public contract. 27 ALR2d 917.

- Change in proposals for public contract after submission of bid as justification for withdrawal of bid or refusal to enter into contract. 104 ALR 1149.

Section 18-2-205 Effect of dealing with a subcontractor

Action against the city:

Held: a materialman, the supplier of a contractor who had a public works contract with the city, **could not hold the city liable** for materials and supplies not paid for by the contractor but used in performance of the contract. C.E. Mitchell & Sons v. Davis, 162 Mont. 221, 511 P.2d 316 (1973).

Section 18-2-301 Bids required - advertising

Municipal Contracts:

State ex rel. Robert Mitchell Furniture Co. v. Toole, 26 Mont. 22, 66 P. 496 (1901).

Held: Where advertising for bids is a statutory requirement neither the municipality nor its agents can make a contract binding upon it without compliance with the formalities so prescribed.

Contract awarded to:

lowest responsible bidder, unless the bids are rejected. Board cannot insert into the formal written contract any condition not consonant with the contract already made by virtue of the acceptance of the bid. In the absence of fraud, accident, and mistake, or other legal reason sufficient to render the acceptance void or voidable, the contract resulting cannot (unless by mutual consent) be changed or annulled, nor may its obligation be impaired, by any act of the Board.

Mistake: right of bidder for state or municipal contract to rescind bid on ground that bid was based upon his own mistake or that of this employee. 2 ALR 4th 991.

Section 18-4-303 Competitive sealed bidding

Administrative rules

ARM 2.5.503 Public notice
ARM 2.5.505 Mistakes in bids
ARM 2.5.602 Competitive sealed bids

NEBRASKA

Ch. 81-161 Competitive bids; award to lowest responsible bidder; elements considered; procurement reports

- All purchases which by law are required to be based on competitive bids shall be made to the lowest responsible bidder, taking into consideration

  (1) the best interests of the state,
  (2) the quality or performance of the . . . to be supplied,
  (3) their conformity with specifications,
  (4) the purposes for which required, and
  (5) the times of delivery.

- In determining the lowest responsible bidder, in addition to price, the following elements shall be given consideration:

  (1) ability, capacity, and skill of the bidder to perform the contract required;
  (2) character, integrity, reputation, judgment, experience, and efficiency of the bidder;
  (3) whether the bidder can perform the contract within the time specified;
  (4) quality of performance of previous contracts;
  (5) previous and existing compliance by the bidder with laws relating to the contract;
  (6) the life-cost of the article. . in relation to the purchase price and specific use of the item;
  (7) performance of the article . . . , taking into consideration any commonly accepted tests and standards of product usability and use requirements;
  (9) when deemed applicable by purchasing agent, each bidder will furnish life-cycle costs between alternatives for all classes of equipment, evidence of expected life, repair and maintenance costs, and.... on a per year basis;
  (11) such other information as may be secured having a bearing on the decision to award the contract.

Ch. 81-161-01 Competitive bids; time required to elapse between notice and opening of bids; waiver

- A minimum of 15 days shall elapse between the time formal bids are advertised or called for and the time of their opening; this requirement may be waived in case of emergency.

Ch. 81-161-03 Competitive bids; rejection by material division

- Any or all bids may be rejected by the material division; It may reject the bid of any bidder who has failed to perform a previous contract with the state. In any case where competitive bids are required and all bids are rejected, and the proposed purchase is not abandoned, new bids shall be called for as in the first instance.

Ch. 81-161-05 Material division/employee; financial or beneficial personal interest forbidden; violations; penalty

- Neither the material division nor any employee under its direction, shall be financially interested, or have any beneficial personal interest, directly, or indirectly, in the purchase or leasing of any articles or property, nor in any firm, partnership,.... furnishing them. No gifts, rebates or money. . . of value whatsoever,.... or contract for future reward or compensation may be accepted. Any person who violates the provisions this Section shall be guilty of a Class IV felony, and forfeiture of his office/position.

NEVADA

Nevada R.S. Section 333.340 Pp. 10848-10849

- Every contract or order shall be awarded to the lowest responsible bidder, taking into consideration:

  (1) the location of the using agency to be supplied;
  (2) the qualities of the articles to be supplied;
  (3) their conformity with the specifications;
  (4) the purposes for which they are required, and
  (5) the dates of delivery.

NEW HAMPSHIRE

None

NEW JERSEY

Ch. 52:34-6 Purchases or contracts payable out of state funds; public advertisements for bids

- All purchases, contracts or agreements, the cost or contract price is to be paid with or out of State funds shall, except as otherwise provided in statute, be made or awarded only after public advertisement for bids in the manner provided for by statute.

Purposes of bidding statutes:

Matter of Honeywell Information Systems, Inc. Protest of Contract Award Requisition X-32, 145 N.J. super. 187, 3676 A.2d 432 (A.D. 1976).

Held: Intended to secure competition and to guard against favoritism, improvidence, extravagance and corruption in order to benefit the taxpayers and not the bidders.

Edward D. Lord, Inc. v. Municipal Utilities Authority of Lower Tp., Cape May County, 128 N.J. Super. 43, 318 A.2d 799 (L. 1974).

> **Held:** Purpose of bidding statutes is to protect public interest and obtain highest possible quality to work for least possible cost, thereby protecting public interest, and yet fairly and adequately compensating private concerns for work and services rendered.

Lincoln Highway Realty, Inc. v. State, 128 N.J. Super. 35, 318 A.2d 795 (Ch. 1974).

> **Held:** The requirement of competitive bidding on state contracts reflects a legislative purpose to preserve to the state all the economic benefits of full and free competition **and** to guard against favoritism, improvidence, extravagance, and corruption in the awarding of contracts; rather, such statutes are enacted for the benefit of taxpayers and should be construed with sole reference to the public good, but in recognition that inexperience of such safeguard might some time outweigh its advantages, provision has been made sanctioning departures where defined justifications appear.

Refusal of lowest bid:

Keyes Martin & Co. v. Director, Div. of Purchase and Property, Dept. of Treasury,. 99 N.J. 244, 4591 A.2d 1236 (1985).

> **Held:** Dir. of Div. of Purchase and Property **did not abuse his discretion** in awarding state loitering advertising contract to agency other than lowest bidder, where Dir. could conclude from record that public **might have perceived** Lottery Commission chairman's relationship with lowest bidder's president as one involving special treatment.

Ch. 52:43-7 Purchases or contracts without advertisement

- Is permitted if

  (1) the aggregate amount involved does not exceed $7500 ..... or
  (3) the aggregate amount involved including labor. . . . does not exceed $25,000.

Ch. 52:34-9 Subject matter making advertisement unnecessary under 52:34-8

- Any such purchase, contract.....negotiated. ... when the subject matter consists of:

  (e) supplies/services as to which the bid prices after advertising are not reasonable/have not been independently arrived at in open competition; provided that no negotiated purchase, contract, or agreement may be entered into under this paragraph after the rejection of all bids received unless

  (a) notification of the intention to negotiate and reasonable opportunity to negotiate shall have been given. .. . to each responsible bidder,
  (b) the negotiated price is lower than the lowest rejected bid price of a responsible bidder, and
  (c) such negotiated price is the lowest negotiated price offered by any responsible supplier.

Ch. 52:34-9 Circumstances under which advertising is unnecessary under 52:34-8

- Any such purchase, contract, or agreement may be made negotiated or awarded pursuant to Section 3 of statute when:

(b) the public exigency requires the immediate delivery of the . . . or performance of the service, or
(c) only one source of supply is available; or
(d) more favorable terms can be obtained from a primary source of supply.

Ch. 52:34-12 Advertisement for bids; award; rejection of bids

- Whenever advertising is required:

(a) specifications and invitations for bids shall permit such full and free competition as is consistent with the procurement of. . . services necessary to meet the requirements of the using agency and shall, wherever practicable include such factors as
    (1) life cycle costs,
    (2) sliding percentage preference,
    (3) scales, or
    (4) other similar analysis as shall be deemed effective by the Dir. of the Div. of Purchase and Property;

(b) advertisement for bids shall be in newspaper or newspapers selected by the State Treasurer as will best give notice to bidders and shall be sufficiently in advance of the purchase of contract to promote competitive bidding;

(c) advertisement shall designate the time and place when and where sealed proposals shall be received and publicly opened and read, the amount of cash/certified check, if any which must accompany each bid, and such other terms as the State Treasurer may deem proper;

(d) Notice of revisions or addenda to advertisements or bid documents relating to bids shall be published in a newspaper(s) as selected by the State Treasurer to best give notice to bidders and sent to the prospective bidder not later than 5 days, Saturdays, Sundays, and holidays excepted, prior to the bid due date;

(e) failure to advertise for the receipt of bids/to provide proper notification of revisions or addenda to advertisements/bid documents related to bids as prescribed by sub-Section (d) shall prevent the acceptance of bids and require the re-advertisement for bids.

(f) award shall be made with reasonable promptness by written notice to that responsible bidder whose bid, conforming to the IFBs, will be most advantageous to the State, price and other factors considered. any or all bids may be rejected when the . . . . determine that it is the public interest to do so.

Ch. 332.065 Award of Contract

- Award to lowest responsive and responsible bidder. Will be judged on the basis of

(1) price,
(2) conformance to specifications,
(3) bidders qualifications including
    (a) such bidders past performance in such matters,
    (b) quality and utility of services,
    (c) supplies,
    (d) materials or
    (e) equipment offered and

(f) their adaptability to the required purpose and in the best interest of the public, each of such factors being considered,

Ch. 332.075 Rejection of bids

- Any or all bids received in response to an IFB may be rejected by the.....or its authorized representative if.....determines that any such bidder is not responsive or responsible or that the quality of the services.....or labor offered does not conform to requirements or it the public interest would be served by such a rejection.

Ch. 332.085 Determination of bidder's responsibility

- Consider the possession of and limit on any required license and may consider the financial

(1) responsibility,
(2) experience,
(3) adequacy of equipment, and
(4) ability of the bidder to complete performance.

Ch. 332.095 Assignment of contracts

(1) No contract awarded may be assigned to any other person w/out the consent of the governing body.

(2) No contract awarded or any portion may be assigned to any person who was declared ... .not to be a responsible person to perform the particular contract.

Ch. 332.105 Bidder's bonds

(1) A bid bond, performance, bond, payment bond or any combination, with sufficient surety in such amount as may be determined necessary. . .. may be required of each bidder or contractor on a particular contract.

(2) Any such bond may be to insure proper performance of the contract and save, indemnify, and keep harmless the local government against all loss, damages, claims, liabilities , judgments, costs and expenses which may accrue against the local government in consequence of the awarding of the contract.

(3) If the local government requires such a bond, it shall not also require a detailed financial statement from each bidder on the contract.

Ch. 332.115 Exceptions to requirements for competitive bidding; Contracts not adapted to award by competitive bidding

(1) Contracts which by their nature are not adapted to award by competitive bidding, including contracts for:

(a) Items which may only be contracted from a sole source,
(c) Additions to and repairs and maintenance of equipment which may be more efficiently added to repaired or maintained by a certain person;
(d) Equipment which, by reason of the training of the personnel or of any inventory of replacement parts maintained by the local government is compatible with existing equipment may not be

subject to the requirements of this chapter for competitive bidding as determined by the governing body of its authorized representative.

Ch. 333.340

- Every contract or order shall be awarded to the lowest responsible bidder, taking into consideration:

(1) the location of the using agency to be supplied,
(2) the qualities of the articles to be supplied,
(3) their conformity with the specifications,
(4) the purposes for which they are required and
(5) the dates of delivery.

Ch. 332.035 Contracts for $10,000 for less; Advertising not required; request for bids required for contract for more than $5000.

(1) Except where otherwise stated in statute:

(a).....may enter into contract of any nature without advertising when the estimated amount required to perform the contract if $10,000 or less.

(b) If estimated amount required to perform the contract is more than $5,000 but nor more than $10,000, requests for bids must be submitted to two or more persons capable of performing the contract, if available. The government body, or its authorized representative shall maintain a permanent record of all requests for bids and all bids received.

Ch. 332.045 Contracts for more than $10,000; Notice to bid

(1) ..... shall advertise all contracts where. . .. exceeds $10,000 at least once and not less than 7 days before opening of the bids.

(2) Advertisement must be by notice to bid to be published in a newspaper published and having general circulation within the county where the local government, or a major portion is situated. If no such paper is published in the county, then publication must be in any newspaper published in the state having general circulation in the county.

(3) Notice must state:

(a) nature, character, or object of the contract.
(b) if plans and specifications are to constitute part of the contract, where the plans and . ...may be seen
(c) time and place where bids will be received and opened.

Ch. 332.055 Emergency Contracts; Competitive bidding not required; emergency defined

- **Emergency**:

(b) may lead to impairment of.....safety . . . . of the public if not immediately attended to.

(2) If such situation exists, a contract necessary to contend with such emergency may be let without complying with statute.

Section 13-1-103 Competitive sealed bids; invitation for bids

- IFBs shall be issued and shall include the specifications for the services, construction or items of tangible personal property to be procured, all contractual terms and conditions applicable to the procurement, the location where bids are to be received and the date, time, and place of the bid opening.

Section 13-1-104 Competitive sealed bids; public notice

(A) The IFBs or a notice shall be published **not less than** 10 calendar days prior to the date set forth for the opening of bids. In case of purchases made by the state purchasing agent, the invitation or notice must be published **at least once** in at least three newspapers of general circulation in the state. In case of purchases made by other central purchasing offices, the invitation or notice shall be published **at least once** in a newspaper of general circulation in the area in which the central purchasing office is located. If no such paper is available, such other notice may be given as is commercially reasonable.

Section 13-1-105 Competitive sealed bids; receipt and acceptance of bids

- Bids shall be unconditionally accepted for consideration for award w/out alteration or correction **except** as authorized in the Procurement Code. Bids are to be evaluated based on requirements set forth in the IFBs, which may include criteria to determine acceptability such as

  (1) inspection,
  (2) testing,
  (3) quality,
  (4) workmanship,
  (5) delivery and
  (6) suitability for a particular purpose.

- Those criteria such as

  (1) discounts,
  (2) transportation costs, and
  (3) total or life cycle costs

that will affect the bid price shall be objectively measurable which shall be defined by regulation. The IFBs shall set forth evaluation criteria to be used.. If lowest responsible bid has otherwise qualified and if there is no change in original terms and conditions, the lowest bidder may negotiate with the purchaser for a lower total bid to avoid rejection of all bids for the reason that the lowest bid was up to 10% higher than budgeted project funds. Such negotiation shall not be allowed if the lowest bid was more than 10% over budgeted project funds.

Section 13-1-106 Competitive sealed bids; correction/withdraw of bids

(A) A bid containing a mistake discovered before bid opening may be modified or withdrawn by bidder prior to time set for bid opening by delivering written or telegraphic notice to location designated in the IFBs as the place where bids are to be received. After bid opening, no modifications in bid prices or other provisions of bids shall be permitted. Low bidder alleging material mistake of fact which makes his bid nonresponsive may be permitted to w/draw its bid if;

(1) the mistake is clearly evident on the face of the bid document
(2) the bidder submits evidence which clearly and convincingly demonstrates that mistake was made.

Section 13-1-109 Competitive sealed bids; multi-step sealed bidding

- When..... makes a determination that it is impractical to initially prepare specifications to support an award based on price, an IFBs may be issued requesting the submission of unpriced offers to be followed by an IFB.

Section 13-110 Competitive sealed bids; identical bids

- When competitive sealed bids are used and two are identical in price and are the low bid, the state purchasing agent may:

(A) Award pursuant to the multiple source award provisions of Sections 126 and 127 of the Procurement Code.
(B) Award to a resident business if the identical low bids are submitted by a resident business and a nonresident business;
(C) Award to a resident manufacturer if the identical low bids are submitted by a resident manufacturer and a resident business;
(D) Award by lottery to one of the identical low bidders; or
(E) Reject all bids and resolicit bids or proposals for the required services.

Section 13-1-125 Small Purchases

- If value does not exceed $2500 for services, a state agency may issue a direct purchase order to a contractor based upon the best obtainable price.

- Procurement requirements shall not be artificially divided so as to constitute a small purchase under this section.

Section 13-1-126 Sole source procurement

- A contract may be awarded without competitive sealed bids/competitive sealed proposals regardless of the estimated cost when the state purchasing agent or a central purchasing office makes a determination,
after conducting a good faith review of available sources and consulting the using agency, that there is only one source for the required service.....

Section 13-1-127 Emergency procurement

- May do so when there is a threat to public. . . safety. . . under emergency conditions; provided that emergency procurements shall be made with competition as is practicable under the circumstances. Written determination of the basis for emergency procurement and for selection of the particular contractor shall be included in the procurement file.

Section 13-1-131 Rejection or cancellation of bids or requests for proposals; negotiations

- An IFB, an RFP/any other solicitation may be canceled or any or all bids or proposals may be rejected in whole or in part when it is in the best interest of the state agency or a local public body.

Section 13-1-132 Irregularities in bids or proposals

- The state purchasing agent . . . . may waive technical irregularities in the form of the bid/proposal of the low bidder/offeror which do not alter the rice, quality or quantity of the services.....

Section 13-1-133 Responsibility of bidders and offerors

- If a bidder/offeror who otherwise would have been awarded a contract is found not to be a responsible bidder/offeror, a determination that it is not same, setting forth the basis of the finding shall be prepared by the state purchasing agent. . . . The unreasonable failure of a bidder/offeror to promptly supply information in connection with an inquiry with respect to responsibility is grounds for a determination that it is not a responsible bidder/offeror.

Section 13-1-134 Prequalification of bidders

- A business may be prequalified for particular types of services.....Mailing lists of potential bidders/offerors shall include by not be limited to such prequalified businesses.

Section 13-1-147 Bid security; rejection of bids

(A) When the IFBs require bid security, noncompliance by the bidder requires that the bid be rejected.

(B) If a bidder is permitted to withdraw its bid before award, no action shall be had against the bidder or the bid security.

Section 13-1-148 Bid and performance bonds; additional requirements

(A) may be required for contracts for. .. . or services as the state purchasing agent. . . .deems necessary to protect the interest of the state agency or a local public body. Any such bonding requirement shall not be used as a substitute for a determination of the responsibility of a bidder/offeror.

Section 13-150 Multi-term contracts; specified period

- Multi-term contract.... services . . . . in an amount under $25,000 may be entered into for any period of time in the best interests of the state agency. . .. not to exceed four yrs; provided that the term of the contract and conditions of renewal or extension, if any, are included in the specifications and funds are available for the first fiscal period at the time of contracting. If amount exceeds $25,000 contract shall not exceed 8 years, including all extensions and renewals.

Section 13-1-152 Multi-term contracts; cancellation due to unavailability funds

- When funds are not appropriated/otherwise made available to support continuation of performance of a multi-term contract in a subsequent fiscal period, the contract shall be canceled.

Section 13-1-153 Multiple source awards; limitations on use

- May be made pursuant to statute when awards to two or more bidders/offerors are necessary for adequate delivery/service. Shall not be made when a single award will meet the needs of the state agency without sacrifice of. . . service. Shall be limited to the least number of suppliers in one geographical area necessary to meet the requirements of. . . Shall be based upon the lowest responsible bid/proposal received in each geographical area.

Section 13-1-155 Procurement of used items; appraisal required

- If tangible property, and cost exceeds $5,000 must request bids as though the items were new, adding specifications that permit used items under conditions to be outlined in the bid specifications including but not limited to requiring a written warranty for at least 90 days after date of delivery and an independent certificate of working order by a qualified mechanic or appraiser.

Section 13-1-65 Brand name specification; use

- May be used only when state purchasing agent . . . makes determination that only the identified brand-name item(s) will satisfy needs.

Section 13-1-65 Brand name specifications; competition

- Seek to identify sources from which designated brand name item(s) can be obtained and solicit such sources to achieve whatever degree of price competition is practicable. If only one source can supply requirement, procurement shall be made under state statute.

Section 13-1-171 Price adjustments

- Adjustments in price computed in one/more of the following ways as specified in the contract:

  (A) by agreement on a fixed price adjustment prior to commencement of performance or as soon after as practicable;
  (B) by unit prices specified in the contract or subsequently agreed upon by the parties
  (C) by costs attributable to the events or conditions as specified in the contract or subsequently agreed upon by the parties;
  (D) by provisions for both upward and downward revision of stated contract price upon occurrence of specified contingencies if the contract is for commercial items sold in substantial quantities to the general public with prices based upon established catalogue or list prices.....

Section 13-1-172 Right to Protest

- A bidder/offeror who is aggrieved in connection with a solicitation or award of a contract may protest to the state purchasing agent or a central purchasing office. The protest shall be submitted in writing within 15 calendar days after knowledge of the facts/occurrences giving rise to the protest.

Section 13-1-173 Procurements after protest

- In event of timely protest,....shall not proceed further with the procurement unless the state purchasing agent. . . makes a determination that the award of the contract is necessary to protect substantial interests of the state agency or. .

Section 13-1-174 Authority to resolve protests

- State purchasing agent. . . . shall have the authority to take any action reasonably necessary to resolve protest of aggrieved bidder/offeror. Authority shall be exercised in accordance with state regulations, but shall not include the authority to award money damages or attorney's fees.

NEW YORK

N.Y.S. Finance Law, Article XI, 174

- Contracts.....shall be let to the lowest responsible bidder, as will best promote the public interest , taking into consideration

  (3) their conformity with the specifications,
  (4) the purposes for which required and
  (5) the terms of delivery.....

NORTH CAROLINA

Uses IFB, but RFP used when IFB is not advantageous or practical.

Ch. 143-52 Competitive bidding procedure; consolidation of estimate; bids; awarding of contracts.

(1) Where total requirements involve expenditures in excess of $5,000 and
(2) where the competitive bidding procedure is used
(3) sealed bids shall be solicited by advertisement in a newspaper of statewide circulation,
(4) at least once and
(5) at least ten days prior to the date designated for opening of the bids and awarding of the contract.

- Contracts for purchase of services shall be based on competitive bids and acceptance made of the **lowest and best bid(s)** most advantageous to the State as determined upon consideration of the following criteria;

  (1) prices offered,
  (2) the quality of the articles offered;
  (3) the general reputation and performance capabilities of the bidders;
  (4) the substantial conformity with the specifications and other conditions set forth in the IFBs;
  (5) the suitability of the articles for the intended use;
  (6) the personal or related services needed;
  (7) the transportation charges (if applicable)
  (8) the date(s) of delivery and performance; and
  (9) such other factors deemed pertinent or peculiar to the purchase in question.

- A bond for faithful performance may be required of the successful bidder at bidder's expense and in the discretion of the Sec. of Administration.

Note:

The term **lowest responsible bidder is not to be construed literally.** In determining who is the lowest responsible bidder, the equality and utility of the thing offered and its adaptability to the purpose for which it is required should be considered.

Ch. 143-54 Certification that bids were submitted without collusion.

- Requires bidders to certify that each bid is submitted competitively and w/out collusion. False certification shall be punishable as in cases of perjury.

Ch. 143-57 Purchases of articles in certain emergencies

- Need arising from unforeseen causes including but not limited to

  (1) delay by contractors,
  (2) delay in transportation,
  (3) breakdown in machinery, or
  (4) unanticipated volume of work,....shall have power to obtain or authorize obtaining in the open market any necessary supplies,.....or services for immediate delivery. Report of same to be made a matter of public record.

Ch. 143-59 Preference given to in-state products and citizens, and articles manufactured by State agencies.

- As far as is practicable. Provided that in giving such preference no sacrifice or loss in price or quality shall be permitted, and provide that preference in all cases shall be given to surplus products or articles produced and manufactured by other State departments, institutions or agencies available for distribution.

NORTH DAKOTA

Uses IFB.

Section 40-22-19 Call for bids - Contents - Advertising

- Advertising in official newspaper of the municipality once each week for two consecutive weeks. Work on two or more improvements can be combined in one advertisement and one contract awarded. Advertisement for bids may be published at the same time as the resolution of necessity and shall:

  (1) specify the work to be done according to the plans and specifications on file in the office of the city auditor;
  (2) call for bids upon basis of cash payment for the work;
  (4) state the time w/in which the bids will be received; and
  (5) state the time within which the work is to be completed.

- Governing body may require bidders to state the rate of interest, **not exceeding** 7% per annum, which the warrants to be received and accepted by the bidder at par in payment for the work shall bear.

Section 40-22-20 Bid to be accompanied by a bond - Bond retained upon failure of bidder to contract - amount of bond

- Each bid for work to be done shall be accompanied by a separate envelope containing a bidder's bond in the amount of 5% of the amount of the bid. State that the bidder will enter in to contract for performance of work in case a contract is awarded to him. If bidder who wins contract fails or refuses to enter into such contract when requested to do so, the bond accompanying his bid shall be retained by the municipality as liquidated damages for such failure. Sufficiency of bond filed by bidder shall be determined by the governing body at the time of considering bids (**Cross References:** bids on public contracts to show contractors' license information see 43-07-12. License requirements for contractors, see Section 43-07-02.)

Section 40-22-21 Bidder's bond - Required - Amount. Repealed by S.L. 1971, ch. 403, 2.

Section 40-22-23 Conditions of bidder's bond

- Shall be made payable to municipality and conditioned that if the principals' bid is accepted and the contract for the work. . . awarded . . ., be, within 10 days after acceptance. . . , or within such.....will enter into and will execute a contract bond in a sum equal to the amount of the bid, and a contract in writing to and with the municipality well and faithfully to perform and complete the work for which bid was accepted,.... Such bond shall be for the benefit of the municipality.

Rejection of bids - Readvertising for bids or construction by municipality w/out contract

- If in opinion of agency is in best interests of the municipality, may reject any and all bids filed. . . If bids are rejected may:

  (1) Readvertise for new bids; or
  (2) Cause work described in plans, specifications, and estimates to be done directly by municipality by employment of labor and purchase of materials required,.....payment for.. work may be provided through special assessments in the same manner as though the work had been performed under contract.

OHIO

Uses IFBs.

Ch. 125.07 Competitive bidding required; exception; notice

- All equipment. . . . purchased by the department of administrative services shall be purchased through competitive bidding, **except**.....or where the amount of such purchase is $5,000 or less. where purchases are required to be made by competitive bidding, notice of the proposed purchase shall be given in the following manner:

  (A) Mail sent to competing persons, firms, or corporations.
  (B) Notice shall state time and place where bids will be opened, conditions under which bids will be received, the terms of the proposed purchase, and an itemized list of the equipment,... supplies, or.....and the estimated quantities or amounts.
  (C) Mailing of. .. notices shall be at least 15 days preceding the day when bids will be opened.

Ch. 125.08 Bid notification lists

- Any person may have name and address, or that of an agent placed on bid notification list of the Department of Administrative Services.....

Ch. 125.081 Percentage of contracts to be set aside for minority business enterprises

- Shall set aside a number of contracts whose aggregate value is approximately 15% of the estimated total value of all such contracts to be awarded in the current fiscal year. Set aside the contracts selected for bidding only by minority business enterprises.

Ch. 125.09 Department may prescribe conditions of bidding

(A) Conditions under which bids received and terms of proposed purchase as deemed necessary, provided that all such conditions and terms shall be reasonable and not unreasonably restrict competition, and

that bidders may bid upon all or any item of the supplies and equipment, or. . . listed in such notice. Applies to use of in-state bidders and products.

Ch. 125.10 May require bond; opening bids

- Department of administrative services may require that all bids be accompanied by a bond in sum and with such sureties as its prescribes, payable to the state, and conditioned that such bidder, if his bid is accepted, will ... . execute terms of the contract and promptly.....

Ch. 125.11 Award of contract

(A) Contract shall be awarded to lowest and best bidder on each Item.

OKLAHOMA

- Award shall be made to the lowest and best bidder.

OREGON

Uses IFBs.

Purchasing and Bids and Bidding in General

Ch. 279.015 Competitive bidding; exemptions

(1) All public contracts shall be based upon competitive bids except:

(d) A contract for supplies, at the option of the contracting agency, may be excluded from the competitive bidding requirement if the value of the contract is less than $2500.

(3)(a) Emergency conditions require prompt execution of the contract.

Ch. 279.017 Specifications for contracts; exemptions

(1) Specifications for public contracts shall not expressly or implicitly require any product by any brand name or mark, nor the product of any particular manufacturer or seller unless the product is exempt under sub-Section (2) of this code.

(2)(b) The specification of a product by brand name or mark, or the product of a particular manufacturer or seller, would result in substantial cost saving to the public agency.

(c) There is only one manufacturer or seller of the product of the quality required.

(d) Efficient utilization of existing . . . supplies requires the acquisition of compatible equipment or supplies.

Ch. 279.023 Least cost policy for public improvements; costs estimates in budget process

(1) It is the policy of the State of Oregon that public agencies shall make every effort to construct public improvements at the least cost to the public.

Ch. 279.025 Requirements for advertisement for bids

(1) An advertisement for bids shall be published at least once in at least one newspaper of general circulation in the area where the contract is to be performed and in as many additional issues and publications as the public contracting agency may determine.

(2) All advertisements for bids shall state:

(a) If the contract is for a public work subject to Oregon statute or the Davis-Bacon Act, that no bid will be received or considered by the public contracting agency unless the bid contains a statement by the bidder as part of its bid that state provisions are to be complied with.
(b) The date after which bids will not be received, not less than five days after the date of the last publication of the advertisement.
(c) The date that prequalification applications must be filed and the class(es) of work for which bidders must be prequalified if prequalification is a requirement.
(d) The character of the work to be done/the material/things to be purchased.
(g) The date, time, and place the public contracting agency will publicly open the bids.
(h) That each bid must contain a statement as to whether the bidder is a resident bidder as defined by state statute.
(i) That the public contracting agency may reject any bid not in compliance with all prescribed public bidding procedures and any or all bids upon a finding of the agency it is in the public interest to do so.

Ch. 279.027 Requirement for bids

(1) All bids made to the public ding agency pursuant to statute shall be:

(a) in writing
(b) filed with the person designated for receipt of bids by the public contracting agency.
(c) Opened publicly by the public contracting agency at time designated in the advertisement.

(2) After having been opened the bids shall be filed for public inspection.

(3) A surety bond, cashier's check or certified check of the bidder shall be attached to all bids as bid security unless the contract for which the bid is submitted has been exempted from this requirement pursuant to state statute. Such security shall not exceed 10% of the amount bid for the contract.

Ch. 279.029 Award of contract; bond; waiver of bond in case of emergency

(1) After bids are opened . ... and after determination is made that a contract is to be awarded, the public contracting agency shall award the contract to the **lowest responsible bidder**.

Note:

The Lowest Responsible Bidder is the lowest bidder who has substantially complied with all prescribed public bidding procedures and requirements and who has not been disqualified by the public contract agency under state statute.

(2) In determining the lowest responsible bidder, a public contracting agency shall, for purpose of awarding the contract, add a percent increase on the bid of a nonresident bidder equal to the percent, if any, of the preference given to that bidder in the state in which the bidder resides.

Ch. 279.031

- Upon execution of the contract and bond by successful bidder, the bid security of the successful bidder shall be returned to the bidder. If bidder fails promptly and properly to execute the contract or bond he shall forfeit the bid security that accompanied the successful bid. Bid security shall be taken and considered as liquidated damages and not as a penalty for failure of the bidder to execute the contract and bond.

Ch. 279.035 Rejection of bids

- The public contracting agency may reject any bid not in compliance with all prescribed public bidding procedures and requirements and may for good cause, reject any or all bids upon a finding of the agency it is in the public interest to do so. Where competitive bids are required and all bids are rejected and the proposed contract is not abandoned, new bids may be called for as in the first instance.

Ch. 279.037 Disqualification of bidder

(1) A public contracting agency may disqualify any person on a public contract if the agency finds:

(a) person does not have sufficient financial ability to perform the contract. If bond is required to insure performance of a contract, evidence that the person can acquire a surety bond in the amount and type required shall be sufficient to establish financial ability.
(b) The person does not have equipment available to perform the contract.
(c) The person does not have key personnel available of sufficient experience to perform the contract; or
(d) The person has repeatedly breached contractual obligations to public and private contracting agencies.

(2) The public contracting agency may make such investigation as is necessary to determine whether a person is qualified. If bidder or prospective bidder fail to supply promptly information as requested by public contracting agency is grounds for disqualification.

Ch. 279.047 Effect of prequalification of DOT

- If person is prequalified with the DOT to perform contracts.....that person is rebuttably presumed qualified with any other public contracting agency for the same kind of work.

PENNSYLVANIA

- Award the contract to the lowest responsible bidder.....

RHODE ISLAND

State of Rhode Island Division of Purchases, General Specifications for all quotations and contracts, para. 25, Title: Award.

- Award will be made to the lowest responsible bidder, as will best promote the public interest, taking into consideration

(1) the reliability of the bidder,
(2) the qualities of the materials, equipment or supplies to be furnished,
(3) their conformity with the specifications,

(4) the purpose for which required and
(5) the terms of delivery.

SOUTH CAROLINA

Section 11-24-1530(7)

- The contract shall be awarded with reasonable promptness by written notice to the lowest responsible and responsive bidder whose bid meets the requirements and criteria set forth in the lFBs.

SOUTH DAKOTA

Section 5-23-16 Notice to successful bidder and execution of contract - Performance bond required

- Notice of successful bid must be timely. Bidder shall within ten days enter into a contract with the state. Contract shall be secured by bond, cash, certified, check, or approved security, in an amount not less than 10% of the total sum of the contract, and in case of supplies or equipment,.....such bond, cash, certified, check, or security shall be in the total sum of the contract.

Section 5-23-18 Award to next lowest bidder when successful bidder fails to enter contract - Liability of defaulting bidder and sureties.

- Should any bidder fail/neglect to enter into a contract within the time specified, the contract shall be awarded in the same manner as specified to the next lowest and best bidder for the same kind of work and material, unless all bids are rejected, and such defaulting bidder or his sureties shall forfeit the amount of the difference in price.

Section 5-23-19 Action for damages against defaulting bidder and sureties

- If successful bidder fails to fulfill the conditions of his contract, the bureau of administration shall proceed to recover from it and its sureties whatever damages the state may have sustained through said default.

Section 5-23-20 Emergency purchases w/out advertising for bids - Circumstances considered emergency

- May purchase upon the most advantageous terms without advertising for bids; provided that except in extreme,.....as far as practicable, secure competitive quotations from **not less than three dealers.**. Emergency shall be deemed to exist when delivery is urgently needed **within 30 days from date of the requisition**, and an **extreme emergency when delivery is required within 10 days.**

TENNESSEE

Section 12-4-109 Contracts for state services

(a)(1) Regulations require to the greatest practicable extent evaluation and consideration of vendors qualifications and cost in the awarding of the contracts.

(2) All administrative contracts shall be awarded on an objective, competitive basis pursuant to state regulations.

Section 12-4-201 Contractors bonds - Securities or cash in lieu of.

- No contract shall be let for any public work....,until the for has executed a good and solvent bond to the effect he will pay for all the labor and materials used by the contractor or any immediate or remote sub-contractor under him, in such contract.....Bond is to be for 25% of the contract price on all contracts in excess of$25,000. Where advertisement is made, condition of the bond shall be stated in the advertisement; provided that State statute does not apply to contracts under $25,000.

TEXAS

Article 664-3, V.C.S., 8e

- The Board shall award contracts to the bidder submitting the lowest and best bid conforming to the specifications required by the Board.

UTAH

Part D: Source Selections and Contract formation

Section 63-56-20 Contracts awarded by sealed bidding - Procedure

(1) Contracts awarded by sealed competitive bidding except as otherwise provided in statute.

(2) lFBs issued when a contract to be awarded by competitive sealed bidding. lFB must include "purchase description and all contractual terms and conditions relevant to procurement.

(3) Public notice of lFBs given a reasonable time prior to date set forth for opening of bids. Notice may include publication in a newspaper of general circulation, a reasonable time prior to bid opening.

(4) Bids to be opened publicly in presence of one or more witnesses at time and place designated in IFBs.

(5) Bids shall be unconditionally accepted without alteration/correction, except as authorized in statute. Shall be evaluated based on requirements set forth in lFBs, may include

(1) inspection,
(2) testing,
(3) quality,
(4) workmanship,
(5) delivery, and
(6) suitability for particular purpose.

- Criteria affecting bid price shall be objectively measurable. **Criteria may include**

(1) discounts,
(2) transportation costs, and
(3) total/life cycle costs.

- No criteria may be used in evaluation not set forth in lFB.

(6) After bid opening, no changes in bid prices/other provisions prejudicial to interest of the state/fair competition shall be permitted.....If corrections, must be in writing by chief procurement officer or head of purchasing agency.

Section 63-56-20.5 Preference to providers of state products

(1)(a) All public procurement units shall, in all purchases of .... supplies, equipment,.....give a reciprocal preference to bidders offering .... supplies, equipment.... performed in Utah as against those bidders offering. . . . in another state.

(b) Amount of reciprocal preference shall be equal to amount of preference applied by the other state for that particular.... equipment,....

(c)(i) Bidder shall certify on the bid that. . . equipment. . . offered are produced,.....or performed in Utah.

(ii) Reciprocal preference waived if certification does not appear on the bid.

(2)(a) If lowest responsive bidder offers . . . equipment..... in a state that gives/requires a preference, and if another bidder has submitted a responsive and responsible bid offering ..... equipment.....in Utah, and with the benefit of reciprocal preference, his bid is equal to/less than the original lowest bid, the procurement officer shall:

(i) give notice to bidder offering . . . equipment. . . . in Utah that he qualifies as a preferred bidder; and
(ii) make purchase from preferred bidder if, within 72 hrs. after notification to him he is a preferred bidder, he agrees in writing to meet the low bid.

(c) Procurement officer may not enter into a contract with any other bidder for the purchase until 72 hrs. have elapsed after notification to preferred bidder.

(3)(a) If more than one preferred bidder - shall award the contract to the willing preferred bidder who was the lowest preferred bidder originally.

Section 63-56-21 Use of competitive sealed proposals in lieu of bids - Procedure

(1) When procurement officer determines in writing the use of competitive sealed bidding is not practicable/not advantageous to the state, a contract may be entered into by competitive sealed proposals.

(2) Proposals to be solicited through RFP. Public notice in accordance with statute.

Section 63-56-22 Small Purchases

- Procurement shall not be artificially divided so as to constitute a small purchase...

Section 63-56-23 Circumstances justifying award of contract without competition.

- A contract may be awarded for....service..... without competition,when .....determines in writing there is only one source for the required . . . service.....

Section 63-56-24 Emergency Procurements

- .....when there exists a threat to public.....or safety under emergency conditions.....may make emergency procurements; provided that same shall be made with as much competition as practicable under the circumstances. Written determination of basis of emergency and for selection of particular contractor shall be included in the contract file.

Section 63-56-25 Cancellation and rejection of bids

- An IFB, an RFP, or other solicitation may be canceled, or any or all bids proposals rejected in whole in part, as specified in the solicitation, when in the best interests of the state.....Reasons shall be made part of the contract file.

Determination of nonresponsibility of bidder

- Unreasonable failure of bidder/offeror to promptly supply information in connection with an inquiry re: responsibility may be grounds for determination of nonresponsibility re: the bidder/offeror.

Section 63-56-27 Prequalification of suppliers

- Prospective suppliers may be prequalified for particular types of . . . services. . . Solicitation mailing lists of potential contractors shall include but not be limited to prequalified suppliers.

VERMONT

T.29, Section 903 (Requisition for supplies and materials).

- Award shall be made to the person whose bid or quotation is in the best interest of the state. . . . in its determination of the best interests of the state shall consider

  (1) specified quality
  (2) price,
  (3) ease of access of supplies,
  (4) incidental administrative costs,
  (5) proven reliability of bidder.

VIRGINIA

Code of Virginia Section 2.1-442

- The contract shall be let to the lowest responsible bidder, taking into consideration

  (1) the quality of the articles proposed to be supplied,
  (2) the times of delivery, provided however, that whenever the Div. has reason to believe that the low bid is not the best price, it shall have authority to enter into future negotiations with the apparent low bidder to the end that the price paid shall be the best price obtainable.

WASHINGTON

1965 c 8 Section 43.19.1911

- Contract shall be let to the lowest responsible bidder. . . . In addition to price, the following elements shall be given consideration:

  (1) the ability,
  (2) capacity, and
  (3) skill of the bidder to perform the contract or provide the service required;
  (4) the character,
  (5) integrity,
  (6) reputation,
  (7) judgment,
  (8) experience, and
  (9) efficiency of the bidder,
  (10) whether the bidder can perform the contract within the time specified;
  (11) the quality of performance of previous contracts or services,
  (12) the previous and existing compliance by the bidder with laws relating to the contract or services;
  (13) such other information as may be secured having a bearing on the decision to award the contract.

WEST VIRGINIA

Ch. 5A-3-11 Competitive bids

- A purchase of and contract for commodities. ... shall be based, whenever possible, on competitive bids.

Ch. 5A-3-12 Publication of solicitations for sealed bids

- Sealed bids required for purchase of commodities estimated to exceed $5,000. Bids shall be obtained by public notice published as a Class II legal advertisement in compliance with.....this code, and the publication area for such publication shall be the county where the dept or agency making the requisition is located. Published within 14 days next preceding the final day of submitting bids.

Ch. 5A-3-14 Bids to be based on standard specifications; period for alteration or withdrawal of bids; awards to lowest responsible bidder; uniform bids; record of bids; and exception

- Award of contract to lowest responsible bidder taking into account

  (1) the qualities of the articles to be supplied,
  (2) their conformity with specifications,
  (3) their suitability to the requirements of the government and the delivery terms. Any or all bids may be rejected. If all bids received on a pending contract are for the same unit price or total amount the director shall have authority to reject all bids, and purchase the required commodities in the open market, if the price paid in the open market does not exceed the bid prices.

WISCONSIN

Subchapter IV, 16.75-1

- All orders or contracts made by the department for all materials, supplies, equipment, and contractual services, except as otherwise provided in sub- (2), (6), and (7) shall be awarded to the lowest responsible bidder, taking into consideration

  (1) the location of the institution or agency,
  (2) the quantities of the articles to be supplied,
  (3) their conformity with the specifications,
  (4) the purposes for which they are required and
  (5) the date of delivery; but preference shall always be given to materials, supplies, equipment and contractual services of Wisconsin producers distributors,suppliers, and retailers.

WYOMING

WS Section 9-3-2021

- Award on the basis of lowest evaluated price.

APPENDIX B
SAMPLE CONTRACTS FROM TRANSIT AGENCIES AROUND THE COUNTRY

To develop a better understanding of the "state-of-the-practice" of maintenance contracting in the transit industry and especially amongst small urban and rural agencies, a telephone survey was conducted and, in some cases, in person follow-up was conducted.

Survey Methodology

Although there is a preponderance of evidence suggesting that competitively contracted maintenance services frequently reduce operating costs, few transit agencies contract for these services.[1] The rationale for retaining in-house maintenance capabilities included factors such as 1) better control over quality of maintenance, 2) better control over the equipment, 3) ability to specialize in transit equipment maintenance, 4) integration with other service functions, and 5) retaining equipment maintenance expertise in-house.

What seems most troublesome is that small agencies have a tendency to have their vehicle maintenance conducted through private service providers using small purchase agreements rather than through competitively awarded contracts. Common arguments provided by small agencies (usually rural systems) against competitively bidding maintenance services are 1) that the bidding mechanism is too complex and thus an administrative burden, 2) the agency is currently able to "shop around" to find the best price, 3) service providers are unsophisticated and thus unable to bid on services, 4) contracting would lock them into a service provider that would be unresponsive to their needs, and 5) contracting would result in their loss of absolute control over equipment.

On the other hand, there are several small agencies in rural areas that do competitively contract for maintenance services. For the most part, they report receiving excellent service at lower costs.

To identify agencies with positive or negative contracting experiences, staff members with transit oversight responsibilities at state DOTs were contacted to identify agencies that currently contract for maintenance services. Agencies from forty-five states were contacted.[a] Twenty-five of the persons contacted did not think there were any systems contracting for maintenance within their particular states. Four contacts did not believe there were any agencies that competitively contracted for maintenance in their states but were not certain. Fourteen state contacts were able to identify agencies that do competitively bid contracts for maintenance services. Through DOT contacts, twenty-three agencies that competitively contract for maintenance services were identified.

Admittedly, this process has missed some agencies, but the purpose of the survey was not to identify the entire population of small transit systems that contract for maintenance services. The purpose of the survey was to identify the state-of-the-practice. A sample of systems was identified to begin the process of determining trends in the industry. The systems identified were then asked to send the researchers copies of their invitation for bid (IFB) or request for proposals (RFP) and a copy of the contract with their current contractor.

The requested information was received from twenty of the agencies identified. In addition, the same information was requested and received from three urban systems operating fixed route service, and receiving Section 9 funds. The following sections summarize the information received from twenty-one of these systems. Site visits were made to some of the systems and more detailed reports are presented in the first portion of the Appendix for four of the systems visited. The contracting documents of the remaining systems are summarized.

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[a] The five states that were not contacted were Alaska, Hawaii, Delaware, Rhode Island and New Mexico.

DETAILED SITE VISIT REPORTS

The following four reports present detailed findings from four site visits made during the summer of 1990, to transit agencies that contract for maintenance services. The purpose of the site visits was to obtain information on contracting experience that could only be derived through personal contact with the agency managers. Three other agencies were visited that contract maintenance but detailed reports are not included.[b] Their addition to the existing four case studies seemed redundant and would provide little additional information.

The reports describe the following four systems:

- Muskegon County Transit, Muskegon, Michigan
- Space Coast Area Transit, Cocoa, Florida
- City of Astoria, Astoria, Oregon
- Oregon Housing and Associated Services, Inc., Salem, Oregon

The seven sites visited were selected because they represent a broad variety of agencies that contract for maintenance services. They range from a Section 9 system that operates both fixed route and demand responsive services (Muskegon, Michigan), to a service operated by a private non-profit agency operating demand responsive services (Salem, Oregon).

MUSKEGON COUNTY TRANSIT

Transit Services Provided

The transit system receives Section 9 funds and provides services within the Muskegon, Michigan urbanized area and also provides services throughout Muskegon County. At the time of the last letting of their maintenance contract, the Transit Agency operated 17 buses, 3 automobiles, and 3 trolley buses. The contractor provides all maintenance services (preventive and corrective), fueling services, vehicle storage, and meeting and office space for the transit system management and drivers. Services are paid for on a time and materials basis.

Contract Summary

Maintenance service to be provided. The contractor provides all maintenance equipment, preventive maintenance inspection every 3,000 miles (estimated to be 162 inspections per year), engine and transmission rebuilding (may be on-site or subcontracted), facilities, fuel facilities and maintenance thereof, facility maintenance, office cleaning, and emergency service. The contractor keeps maintenance records, orders and maintains parts inventory, prepares a monthly Muskegon Area Transit System maintenance invoice, and completes other forms necessary for billing. The contract is not subject to modification except by written amendment.

Facilities and equipment requirements. The contractor provides a service area to house the transit system's vehicles. The storage area must be secure and able to house 10 vehicles and must be heated to 45 degrees Fahrenheit during the winter months. The service area may be used as storage, if heated. Electrical outlets are required for preheaters on buses stored outside during the winter. The parking lot must be large enough for

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[b] The agencies visited that are reported here are the: Integrated Transit System, Ottumwa, Iowa; City of Corvallis, Corvallis, Oregon and; Newport Area Transit, Newport, Oregon.

drivers to practice turns, starts, stops, etc., and must be fenced. The contractor must provide adequate parking for employees, no fewer than 15 passenger vehicles spaces are provided in a fenced area.

The Transit System Manager's office is provided by the contractor and it shall not be less than 120 square feet, and a combined office area of 235 square feet to house the clerk and two field supervisors. The contractor also provides an assembly area for 12 operators of 235 square feet or more. All the above areas are heated and air conditioned. Also, male and female restrooms are required.

A protected drive-through area for inspection and fare box collection is required. Maintenance equipment must include tools, hoists, lubricating equipment, air compressors, etc. However, the contract does not spell out the specific tools or maintenance equipment required.

The contractor must provide theft-proof fuel tanks, separately metered by type and sufficient to store 10,000 gallons of diesel fuel and 5,000 gallons of gasoline. Fuel is dispensed from separately metered pumps.

Parts requirements. The contractor must provide a parts storage area. A spare parts inventory for Muskegon Area Transit must be sufficient to meet all daily, routine, and scheduled preventive maintenance needs of Muskegon Area Transit buses. However, the contract does not spell out what sufficient means. The parts inventory is maintained
at no additional cost to Muskegon Area Transit System. When used on Muskegon Area Transit vehicles, equipment parts and materials are billed at the contractor's cost plus a negotiated handling fee.

Service quality requirements. The contractor provides the Transit Agency's vehicles priority over all others waiting for maintenance service and performs maintenance in a good, workman-like manner. There is nothing in the contract that identifies what "priority" or "good, workman-like manner" means.

Required mechanic qualifications include factory certification or demonstrated experience in specifics relating to equipment belonging to Muskegon Area Transit System including: Detroit Diesel engines, Allison transmissions, Ridewell air ride suspensions, as well as electrical, hydraulic and compressed air systems. The contractor must provide one "lead" mechanic with the above qualifications.

Pricing of service. Parts cost is based on contractor cost plus 15 percent handling fee. Preventive maintenance is based on a flat rate per inspection (e.g. 132 dollars for each 3,000 miles); the labor rate is 22.66 dollars per hour; service calls are 10 dollars per occurrence; radio monitoring is 1.50 dollars per hour; office and facility cleaning is 6 dollars per hour. Extra or reduced cost items generated by changes are subject to negotiation at anytime.

Information provided to contractor to base bid. The bidding documents included a number of elements and worksheets for prospective contractors. Items included in the bid package are: bid instructions; bid sheets comprised of rent for all buildings, equipment, facilities, utilities and services, mechanical labor rate (am, pm, weekend), service call labor rate, labor rate for servicing and fueling personnel; labor rate for radio monitoring, office cleaning, parts handling, preventive maintenance, engine/transmission rebuilt parts list; and a preventive maintenance inspection checklist. Bidders were provided with an estimate of the labor and materials required to conduct maintenance based on the previous year.

Contractor selection criteria. The selection was based on low bid price. All the costs were weighed and the summation is based on historical usage rates. The bidders and the transit agency could use the previous year's number of mechanic hours, number of preventive inspections, quantity of parts, etc., to estimate the total annual cost of each bid.

Miscellaneous requirements. The contractor provides personal injury (500,000 dollars limit) and property damage (500,000 dollars limit) liability insurance.

INTERVIEW WITH TRANSIT MANAGER[c]

Background

In 1972 the private system serving Muskegon, Michigan went out of business. The City was without transit service for two years, and in 1974 the public expressed an interest in the services. The County Administrator recruited Mr. DeLong, the owner of DeLong Trucking, to help get the equipment back in shape and assist in the operation of service. The County did not have the garage space to maintain the equipment, so the County originally housed the equipment at DeLong's facility. An informal relationship developed (no contract was developed) where DeLong Trucking was responsible for the maintenance of the equipment and the County Road Commission operated and managed the system.

The County and DeLong Trucking continued to operate under an informal contract until 1986 when another maintenance provider approached the County and suggested that they would like the business and were interested in bidding on the services. In 1986, the County developed a bid package, requested bids and DeLong Trucking was the low bidder. The contract was for a period of two years and, after two years, it has been renegotiated and continued. DeLong's competitor has since gone out of business. Although the Transit Agency's manager could not quantify the drop in cost of DeLong's services, they did reduce their rates in 1986 when the work was competitively bid.

The Contract and Contractor Management

Contract Specification. The Muskegon Area Transit System (MATS) contract is based on a technical specification, that is, the contract specifies inputs into the work (certified mechanics, adequate space and facilities, etc.) but does not specify measures of performance (outputs) to be met. In addition, the contract price is based on time and materials used in the maintenance of MATS vehicles. In general, a performance based specification would focus on total cost. The reason given for using a technical specification with time and materials pricing rather than a performance based specification were:

1. The County Road Commission had significant experience with the contractor. As a result, the contractor understood the performance requirements expected. Therefore, performance has never been a significant issue.

2. MATS felt they could more easily ensure that the service requirements were actually being conducted if they bought services on a time and materials basis. In other words, they would pay for what they received. It, therefore, allows the transit manager to modify the maintenance program when the need arises. In some cases, they could even modify maintenance services to fit needs for vehicle availability (e.g., cancel a preventive maintenance inspection to allow the vehicle to be available for service). Since the contractor is not responsible for the mechanical performance of the vehicle (only responsible for the performance of repairs and preventive maintenance conducted) modifications in the maintenance program would not affect the County's evaluation of the contractor.

Quality of Maintenance Work. The contract specifies that the lead mechanic must be qualified to work on major bus components (transmissions, engines, etc.) by either certification or experience. In the past, MATS and DeLong Trucking have shared the cost of sending mechanics to factory training on major bus components.

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[c] Interview with Ernest L. Palmer, Transit Manager, Muskegon Area Transit System, June 18, 1990.

When new vehicles are purchased, the contractor and MATS will have to consider similar training and at that time the cost of training will be negotiated.

The quality of parts has not been an issue. Because the contractor is reimbursed for the parts on a cost plus a fixed percentage basis, there is no incentive for the contractor to use substandard parts.

Scheduling and Authorizing Maintenance. The contractor keeps track of mileage for purposes of identifying when a preventive maintenance inspection is due. The Transit Manager is informed of the need to perform an inspection and it is MATS management that identifies when an inspection is to be scheduled. MATS' management retains this responsibility to make sure that enough buses are available to meet their service requirements.

Preventive maintenance inspection content is controlled by MATS' management. MATS' management likes to explicitly identify the elements to be inspected because it helps to define the quality of preventive maintenance. Also, well defined preventive maintenance inspection elements help the potential contractor to estimate the costs of conducting a preventive maintenance inspection.

In the morning, a mechanic performs a pre-trip inspection and starts the buses. Before the drivers leave the property, the bus is driven through a maintenance bay and a MATS supervisor installs a vault and performs a walk-around inspection, looking for visible signs of body damage and proper operation of lights. The inspection of each vehicle by a MATS inspector also serves to audit the quality of maintenance work.

Contract Management. The Transit Manager's office and the contractor are housed in the same building (the contractor's facility). This allows the Transit Manager to inspect vehicles and work being conducted, discuss work with mechanics and regularly confer with the contractor's manager over work flow and other day-to-day issues. At one time, the Transit Manager's office was in the County's offices in downtown Muskegon with the Transit Manager traveling to the contractor's site on a daily basis to confer with the maintenance contractor. Currently, the Transit Manager has the reverse daily pattern and spends the majority of the entire day at the contractor's site, and travels to the County offices on a daily basis.

The Transit Manager felt that the close auditing of work was one of the keys of success. From time-to-time, he would take work breaks at the same time the mechanics take their work breaks to inquire about the condition of his vehicles and the progress of maintenance work.

Auditing of Contractor's Work. On a day-to-day basis, the Transit Manager inquires on and inspects work in progress. On a monthly basis, all invoices are reviewed in a two-step process. The first step is a review of costs and activities for accuracy in reporting and billing. The first review is conducted by a bookkeeper. The second step is a review of invoices by the Transit Manager to assess the quality of work conducted.

Repair work will often be initiated by an operator defect report. A copy of the defect report is kept by the Transit Manager and a copy is sent to the contractor. The contractor reports, on their copy of the defect report, the maintenance activities conducted to correct the defect, and the completed report is sent to the Transit Manager (these reports are kept for two years). The defect reports and the invoices are reviewed to identify mechanical reliability trends, misdiagnosed repairs and rework.

Much of the enforcement of the contract is conducted through constant communication. For example, the contract's only reference to turn-around time on equipment is that the contractor shall provide MATS with priority service. In practice this has been interpreted to mean that when a maintenance problem is likely to cause unavailability of a bus to meet an assignment, the contractor immediately begins work on the vehicle. There is no official enforcement mechanism to ensure that the contractor expeditiously works on equipment

other than to nullify or threaten to nullify the contract. However, in practice, the Transit agency may delay monthly payments to gain leverage over the contractor.

Drug Testing. No plan has been worked out for drug testing. However, MATS management expected that DeLong Trucking employees would become part of MATS' pool for random drug testing and that DeLong would bear the cost of drug testing their employees.

SPACE COAST AREA TRANSIT

The transit system receives Section 9 funds and provides transit services throughout Brevard County, Florida. The County contains about 365,000 residents.[2] The County is on the east coast of Florida and is 72 miles long and only ten miles wide. Although the county has a significant population base, there is no single dominate population or activity center.

Transit services are primarily demand responsive. The majority of the riders are the elderly and handicapped. In 1987, when the maintenance contract was initiated, the transit fleet consisted of 29 buses and six vans.

The maintenance contractor is ATE Management and Service Company, Inc. (a transit management consultant) and Ryder Truck Rental, Inc (ATE/Ryder). Both companies are subsidiaries of the Ryder System, Inc.

Prior to contracting, Space Coast Area Transit (SCAT) had its own maintenance facility and its own maintenance workforce. SCAT's maintenance facility is located in the southern portion of its service area (the city of Melbourne) and the contractor currently leases SCAT's facility. The contractor also performs maintenance in its own facility in the northern portion of the service area (the city of Cocoa) where it stores and services vehicles.

The contractor provides all maintenance servicing and daily vehicle inspections. The contractor sells fuel to SCAT, but fuel is not part of the contracted services. Pricing of the services is based on a flat fee per bus per month and a fee per mile of travel. The fee per mile varies with the type of vehicle and is proportional to expected maintenance costs for the vehicle. For example, purpose-built, 35 foot coaches have a higher per mile cost than do light duty vans.

When the contract was bid, despite the fact that the transit agency attempted to solicit proposals from several contractors, the ATE/Ryder offer was the only proposal received. The agreement was a sole source negotiated procurement. In the justification of the sole source purchase, the transit agency's evaluation of ATE/Ryder's cost proposal estimated that the contracted services would cost 79,837 dollars less than if the services were conducted inhouse.[3] In general, the Transit Manager believes the maintenance service improved when maintenance activities were assumed by the contractor and remarked that it is surprising they got "better service at a lower cost." The contract has been in force for three years and the county is negotiating a two year extension with no cost increase.

Contract Summary

The contractor provides all preventive and corrective maintenance for all vehicle systems except radio equipment, farebox, and seats. Included in ATE/Ryder's fee are road call services for mechanical or tire failure, vehicle cleaning and washing, and vehicle inspections. Not included in the fee are fuel, the costs of repairs or body work resulting from driver abuse (including road calls) and any single repair where the cost (parts and labor) exceeds one-half percent of the replacement value of the vehicle.

ATE/Ryder provides personnel and management to complete and supervise all work, including service island personnel to perform inspections. In addition, ATE/Ryder has provided maintenance management expertise when special problems have arisen. ATE/Ryder also keeps and reviews maintenance records through their computerized maintenance management information system.

Repairs that exceed the limit of one-half percent of replacement value of the vehicle, repairs due to abuse or accidents, and repairs of radio equipment, fareboxes and seats are coordinated with SCAT and billed in a separate invoice.

Facility and equipment requirements. SCAT leases to the contractor its own maintenance facility (in Melbourne) for one-dollar per year. Included with the county's facility are all county owned equipment, tools, service trucks and furniture located at the maintenance facility. The facility includes a main building with four service bays, a parts room, breakroom, washrooms, locker rooms, and an attached tire storage shed.

The contractor is responsible for the day-to-day janitorial and custodial service of the leased building. The maintenance for the building and grounds is provided by the county.

At the contractor's facility (in Cocoa), ATE/Ryder provides a meeting room and parking for SCAT vehicles in a secured area. However, the contract does not spell-out any space or maintenance equipment requirements (e.g., numbers of pits or hoists, diagnostic equipment, etc.) at the contractor's facility. The only criteria identified for maintenance equipment requirements in the Request For Proposals was that the "Contractor shall provide ... items/materials required to professionally maintain the bus systems."[4]

Parts requirements. The contractor provides new or replacement parts necessary to keep vehicles operating properly. All parts and materials must meet Original Equipment Manufacturer's (OEM) standards. The contractor has title to, and right to retain and dispose of, any parts removed from vehicles. In practice, the transit agency does not attempt to enforce the OEM standards for parts but allows the contractor to manage and control parts supply. Quality of parts and repairs are evaluated through the transit agency's review of maintenance work reports. If reliability problems are apparent, the transit agency personnel brings the problem to the attention of the maintenance contractor.

Service quality requirements. There are no specific quality requirements on maintenance work. However, the thoroughness of the proposed preventive maintenance program and the qualifications of the mechanics and contract managers are used in the contractor selection process.

Pricing requirements. The contract pricing is based on fixed fee per month per vehicle and a fee per mile traveled by each vehicle. The fixed fee per month is increased by 294 dollars per month for each bus added to the fleet. The rate per mile varies for 0.23 dollars per mile for a coach to 0.065 dollars per mile for passenger van. All prices exclude the cost of operator abuse, accident damage, major repairs (those that exceed one-half percent of the replacement value), radio repairs, seat repairs and farebox repairs.

The price per mile provides an incentive to the contractor to keep the vehicles operating and in service. Specifically, when a bus is down for maintenance, the contractor cannot accumulate its mileage fee.

Information provided to the contractor to base bid. Potential contractors were provided with a list of vehicles and the vehicle's location. Contractors were permitted to visit the existing facilities and inspect the vehicle and vehicle maintenance reports.

Contractor selection criteria. Potential contractor selection process followed two steps. The first step was to determine if the contractor met the minimum qualification. The proposals of qualified contractors' are then evaluated and proposer interviews are scheduled. The purpose of the evaluation and interview is to select the

contractor that best meets the selection criteria. Minimum qualifications included:[5]

- Extensive recent experience in maintenance of diesel powered buses and/or trucks, preferably of a type which have same engine and transmission configuration as the County's buses.
- Properly trained/experienced mechanical staff to perform the required services.
- Sufficient organizational/manpower resources to perform all necessary services in a timely manner.
- A satisfactory record of performance, including positive references from other purveyors of services.
- Adequate financial resources or the ability to obtain such resources as required during the performance of the agreement.

The Request For Proposal listed in order of their importance the criteria for selection. However, it did not list the relative importance of criteria or a method for determining the relative value of each selection criteria (e.g., is the first criteria twice as important as the second). The criteria included:[6]

- Experience of the proposing firm in heavy vehicle maintenance (buses and trucks) including reference checks, financial stability, and capabilities of proposer, organizational depth/resources and other services included in the proposer's offer.
- Three year contract price (based on total cost per mile of all services offered).
- Proposed preventive maintenance inspection (P.M.) program.
- Proposed personnel and their experience including training, certificates received, etc.

Because there was only one proposer, the one proposal was evaluated to confirm that it met the minimum criteria and the selection process was never exercised. However, the criteria clearly showed price is not the most important attribute of service.

Miscellaneous requirements. SCAT is responsible for general liability (300,000 personal injury/50,000 property limits) covering the vehicles and the contractor.

INTERVIEW WITH TRANSIT AGENCY MANAGEMENT[d]

Background

SCAT had their own maintenance personnel until the contractor took over maintenance responsibilities. The agency had several reasons for contracting the services. The predominate reasons included:

- The large number of aerospace industry contractors within the county (Brevard County is the home of the John F. Kennedy Space Center, Cape Canaveral Air Force Station and Patrick Air Force Base) which tend to force up the prevailing wage for qualified mechanics. The local market driven wage rates tend to be higher than the comparable wage rates in the remainder of Florida. It was difficult for

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[d] Interview with Perry J. Maull, Transit Director, and James Brown, Operations Supervisor, Space Coast Area Transit, June 28, 1990.

SCAT to retain qualified mechanics given the relatively modest wage structure of the county. As mechanics worked for the agency and became more knowledgeable, they switched to better paying jobs in the private sector. The mechanic turn-over rate made it difficult to maintain continuity.

- The manager of the maintenance department had been promoted up through the ranks. He was unable to make a smooth transition from labor to management. As a result, management of the maintenance department tended to be ineffective in decision making, in providing direction and in motivating workers. Because the maintenance department was poorly managed, employees tended to be non-responsive to top management's requests.

- The county government's (SCAT is a county agency) top administrator had a very positive opinion of privatization of governmental services. Therefore, all county managers were encouraged to employ private sector contractors where contracting would reduce costs and/or improve services.

When vehicle maintenance was privatized, displaced employees were given the opportunity to take equal or better paying jobs within the agency. Two mechanics went to work for the contractor, some accepted positions in other county departments (the county public works department) and others found jobs elsewhere. One is still working for the transit agency.

Contract and Contract Management

Contract specification. The SCAT contract specified designed based on outputs (miles traveled) and the contract is not written to encourage or require the contractor to reach a specific performance level. However, the contractor does have the incentive to keep the buses reliable and operating because of the pricing structure. If a bus is being repaired, the bus cannot accumulate miles and the contractor does not earn a mileage fee. Also, if a bus breaks down due to a maintenance related problem, it is the contractor that pays for the service call, thereby also encouraging reliability.

The contractor was allowed to specify its own preventive maintenance program. Ryder Truck Rental, Inc. has its own preventive maintenance program which the ATE/Ryder team has adapted to SCAT's buses. The preventive maintenance program even includes the preventive replacements of units (e.g., replacement of the starter motors and other components in advance of their failure) to increase reliability and reduce roadcalls. Allowing the contractor the flexibility to develop its preventive maintenance program and not specifying inputs was seen by transit management as a positive attribute of the contractual relationship.

Although little thought was initially given to alternative pricing mechanisms, management saw no reason to change the service pricing system and likes the current flat fee per bus plus a mileage fee.

Quality of maintenance work. Management felt the quality of maintenance work by the contractor was quite good. The contractor is a national firm with a broad range of resources. It has its own training programs and experts to troubleshoot difficult problems.

Scheduling and authorizing maintenance work. The maintenance contractor is responsible for scheduling routine repairs and preventive maintenance. All other repairs are coordinated directly with the transit agency.

Through time, the contractor's local management staff has developed an understanding of the vehicle requirements of the transit system. Knowledge of the transit agency's vehicle requirements has resulted in the contractor always having enough vehicles ready for service to meet the morning pull-out.

Every evening, the contractor's local management develops a schedule, identifying which vehicles are to be held the next day for preventive maintenance and repairs. The schedule is then transmitted to the

dispatcher's office (using a FAX machine). In the morning the dispatchers prepare an assignment (a trip sheet) for each of the drivers matching them with a bus. The drivers' vehicle assignment and trip sheet is sent to the maintenance site (using a FAX machine) where the drivers receive their assignments in the morning.

Contract management. The Operations Supervisor is responsible for day-to-day contract administration. Contract administration and performance auditing takes place at several levels. On an informal level, the Operations Supervisor makes random visits to the contractor's facilities and inspects vehicles and questions management personnel if he finds anything unusual.

Regular meetings are scheduled once a week. The weekly meetings between the Operations Supervisor and the contractor's local management are held at the transit agency's offices. The purpose of the meeting is to review the week's maintenance activities. Of particular importance to the meeting is the review of events that caused a delay or service disruption. The contractor and Operations Supervisor review incidents to determine the cause and identify whether delays indicate a trend.

The dispatchers keep records of any delay or service incident (caused by mechanical failure or otherwise). If the incident is caused by a maintenance related problem, the dispatcher records the time the mechanic leaves the shop, the time the mechanic arrives at the bus and how long it took for the incident to be corrected.

In the past, review of maintenance records and dialogue between SCAT management and the contractor have promoted change in the contractor's maintenance practice and improved vehicle reliability. Transit agency management used its experience with a repetitious air conditioning failure on a specific vehicle to illustrate the value of reviewing records and hands-on management of the contractor. When the high frequency was pointed-out to the contractor, the contractor blamed the high frequency of repairs on poor design. The transit agency eventually had the air conditioning unit distributor look at the problem and found out that the units were not being maintained correctly. When the problem was identified to the contractor, the contractor's management admitted their mistake and adapted their preventive maintenance program to include the proper checks for the bus's air conditioner, thus improving vehicle reliability.

The contract specifies no penalty for not meeting the transit agency's requirements for availability other than termination of the contract. However, transit agency management believe the contractor has made a good faith effort to respond to all reasonable requests and saw no reason for developing any additional performance controls.

Drug testing. When asked whether the enforcement of drug testing would become an issue for the contractor, transit agency management indicated that the contractor already has a drug testing policy. In fact, management felt that the contractor is likely to take a tougher anti-drug enforcement policy than the transit agency.

CITY OF ASTORIA

Transit Services Provided

The City of Astoria is located in North Western Oregon at the mouth of the Columbia River. The city has a port facility, and logging and timber related industries around Astoria provide a significant portion of the cities economic base. At one time, fish canneries were the major industry. As canning has been moved off-shore to mechanized ships, the city's economic base has become increasingly dependent on tourism. It has a population of roughly 10,000.

Transit services in Astoria were privately operated until 1971. At that time, the city assumed the operation of the system. In 1973, a property tax was approved by the voters to provide operating and capital

assistance. The city contracted with the previous private owner. The contractor operates and maintains the vehicles and the city manages the system and owns the rolling stock.

The transit services operated in Astoria are partially funded by Section 18. The costs of operations are covered roughly, one-third by farebox receipts, one-third by city sources and one-third by federal and state operating assistance. The routes are serviced with two, twenty-five passenger coaches, although only one bus operates at any one time due to funding shortages. The City's Department of Public Works is responsible for the management of the contract.

The contract is very simple and contains minimal technical or performance direction. The pricing of services is based on a fixed rate per mile. The current contract is for a three year period.

Contract Summary

Maintenance service to be provided. The description of maintenance services is rather brief. The contractor has responsibility for preforming preventive maintenance in accordance with the Original Equipment Manufacturer's (OEM) maintenance program. The OEM program may be modified at the request of the contractor and the approval of the city. The contract outlines no specifics on the preventive maintenance process.

Non-scheduled maintenance (maintenance resulting from a equipment failure) is also to be conducted by the contractor and with the approval of the city. However, the city decided to assume the risk of major component failure (drive train failures), and compensate the contractor directly for such repairs.

The contractor is to keep records on maintenance activities. However, because these records are not used as a basis for compensation, they are not generally reviewed by the city.

Facility and equipment requirements. There are no specifics included in the contract covering specific facilities or the maintenance equipment other than they must be adequate to perform maintenance and store the vehicles and be based at an acceptable location.

The contractor must provide a backup vehicle (a third vehicle) for use at anytime when the city's vehicles are unavailable. When the backup vehicle is used, the contractor is compensated at the same rate per mile. There is typically a need for the backup vehicle during inclement weather, during the winter. Because of the hilly terrain, the routes are modified when there is snow, which adds to the length of the route and results in greater equipment demands.

Service quality requirements. There are no specific requirements for skill levels of the maintenance personnel. No requirements are identified for quality or manufacturer of parts.

Semiannually, a public works department mechanic inspects the buses. The purpose of the inspection is to review the vehicles for proper maintenance and make recommendation for modification of the preventive maintenance program or recommend repairs. In the past, this inspection has resulted in recommended corrective repairs.

Information provided to contractor to base bid. No formal information package or cost estimation worksheet was provided to prospective bidders. The only information provided, other than contractor requirements, was an estimate of the average hours of operation and average miles traveled by the transit system per year.

Contractor selection criteria. The request for proposals lists two categories for evaluation of the contractor and contractor's proposal; the quality of the proposed service and the contractor's qualifications. Specific items identified to evaluate the quality of the proposed service include:

1. Demonstrated understanding of the task.
2. Thoroughness of the proposal.
3. Evidence of sound organizational and managerial practice.
4. Cost of the proposed program.
5. Suitability of the proposal to the specific needs of the community.

Specific items to evaluate the contractor's qualifications included:

1. The adequacy of the contractor's financial resources to complete the proposed activities.
2. Past performance with similar services.
3. The adequacy of the management, staff and physical facilities to complete the proposed activities.
4. Ability to meet federal and state health and safety regulations and equal opportunity requirements.

The request for proposal does not provide weights for each of the criteria. In practice, the proposals are evaluated by the director of public works, who prepares a report on the results of the evaluation and recommends a contractor to the city council. The city council is the contractor selection committee.

In the past, there has been only one contractor to bid on the service. There has been implied competition by another interested contractor who has not submitted a proposal in the past. Because only one bid was received, the evaluation of the proposal has been primarily an evaluation of the cost of service to ensure reasonableness.

Miscellaneous requirements. The contractor must provide a bid bond for five percent of the first year's proposed cost and 25,000 dollars performance bond. The contractor must provide insurance of one million dollars protection on personal injury and an additional one million dollars protection for property damage.

INTERVIEW WITH ASTORIA CITY OFFICIALS[e]

Background

The current contractor, TBR Company, has been the only contractor to operate the service. Because of the long term relationship with the city, the contractor understands the services and requires very little formal administration on the part of the city staff.

Oversight of the system is provided by a formal city committee, the Transportation Committee. The Transportation Committee consists of interested citizens and a member of the city of council. They meet with the contractor to review the service and discuss modifications to the service. During the meeting, transit service complaints are resolved. This committee provides the majority of the contractor auditing functions.

Contract specification. The contract does not specifically identify maintenance activities. It does, loosely specify the performance of the contractor's maintenance by stating that "vehicles shall at all times be kept

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[e] Interview with Ben Shaw, Director of Public Works and Cindy Holt, Administrative Assistant, August 6, 1990.

mechanically sound, safe, clean, and reliable." In practice, very little administrative oversight of the maintenance activities has been conducted.

Maintenance is generally seen as part of the output of satisfactory transit service. The contractor is responsible for the reliability of the vehicles. If the bus breaks down, it is the contractor's responsibility not the city's burden. Therefore, designing the maintenance program to meet the service requirements is the job of the maintenance contractor.

In general, the City's staff felt the contractor should be familiar with transit operations and, therefore, should be knowledgeable of bus maintenance.

Contract Management. The majority of the contract management focuses on the reliability of route service. The Transportation Committee provides the predominate contract administration activity with City staff providing day-to-day oversight.

At the Transportation Committee meetings, the contractor provides monthly reports on mileage traveled, ridership and farebox revenue. The contractor starts each of the meetings with a review of these statistics. This meeting is the primary source of contractor auditing.

The City staff does not have day-to-day contact with the contractor over maintenance issues. However, the semiannual maintenance inspections by a City mechanic have resulted in City recommended repairs. However, other than that semiannual inspection, there is little dialogue regarding maintenance.

Drug Testing. No plans have been developed for drug testing. However, no troubles are foreseen in working out a drug testing arrangement with the contractor.

OREGON HOUSING AND ASSOCIATED SERVICES, INC.

Transit Services Provided

Oregon Housing and Associated Services, Inc. operates two demand responsive transportation services. One is within the Salem urbanized area and the other is a county-wide service. They operate three vans, one mini bus, and six club wagons.

Within the city, the fixed route system (Salem Area Mass Transit District) contracted with Oregon Housing and Associated Services, Inc. for demand responsive service for the elderly and handicapped until 1986. In 1986, the state legislature developed a new program where one cent per package of the cigarettes tax was earmarked for elderly and handicapped transit services. In 1986, the fixed route operator began passing the cigarette tax receipts to the Oregon Housing and Associated Services, Inc.

Within the county surrounding Salem, Oregon, Transit services are funded from the cigarette tax revenues (state sources) and federal funds are receive through Section 18.

In 1983, the private non-profit agency that provided demand responsive transportation services for the elderly and handicapped in the area when bankrupt. Another senior citizen service agency took responsibility for the defunct transit system, it built transit services and ridership back up, and then spun the transit operation off into a separate non-profit agency (Oregon Housing and Associated Services, Inc.). When the new agency started, maintenance was not structured and there was no routine for preventive maintenance. The vehicles

were stored at a service station and maintenance was conducted on an as needed basis. The vehicles suffered from deferred maintenance and there were no maintenance records.

The informal relationship with the service station lasted roughly one year. To develop a routine and accountability for maintenance costs and activities, the manager decided to competitively contract for maintenance services. Contracting has resulted in a preventive maintenance routine, permitted better budgeting, and provided more certainty for the future magnitude of maintenance expenditures.

Contract Summary

The contract is a simple time and materials contract. Selection of the contractor is conducted through an invitation for bid. The agency asks the contractor to provide preventive maintenance inspections every 3,000 to 3,500 miles and identifies a short list of items to be inspected, fluids to be changed, and adjustments to be made. Other inspections are identified at 5,000 and every 10,000 to 12,000 miles. The contractor is to also provide towing and emergency services.

Pricing. Pricing is to be based on the time and materials. The price of labor is set at a flat rate and parts are discounted from retail prices.

Records and reporting. The contractor is required to itemize all maintenance activities by type of purchase, including the reporting of the parts used, part's costs, and labor costs. The contractor must bill Oregon Housing and Associated Services monthly for all services performed. Oregon Housing and Associated Services pays the contractor within ten working days after receipt of the billing. Monthly billings will reflect charges made through the last working day of each calendar month.

Other requirements. The contract is very simple and is only one page in length. The agency is currently contracting with a large automobile dealer with an excellent reputation. Therefore, it is very unlikely that the agency will need to protect itself through a more descriptive contract which more fully delineates the contractor's responsibilities and requirements. However, the researchers feel that the contract should and could be made considerably more thorough.

INTERVIEW WITH AGENCY MANAGER[f]

A contract for maintenance services is bid each year and during the last seven years there have been three contractors. The current contractor has won the contract for the last three years and is a automotive dealer. The previous contractors were a service station and a maintenance garage.

The agency likes dealing with the automotive dealer because of their good working relationship. Because the transit system has made a long term commitment to taking all their work to the automobile dealer, the dealer makes a good faith effort to provide punctual service.

Record keeping. The agency's dispatch coordinator maintains a set of records for each vehicle, identifying what maintenance work has been conducted to each vehicle. The maintenance shop also maintains parallel maintenance records on the contractor's computer.

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[f] Interview with Donna Wickman, Oregon Housing and Associated Services, Inc., August 8, 1990.

The drivers keep track of the miles accumulated by the vehicle and inform the dispatching office when the vehicle is approaching the mileage threshold for a preventive maintenance inspection. The drivers are responsible for inspecting their vehicle before making a run and this pre-run inspection is where any unscheduled maintenance need is identified.

Contract specification. In developing the contract, the agency staff admitted not being knowledgeable of maintenance. Therefore, the contract specifies neither inputs or output. The contract simply identifies the interval when preventive maintenance work is to be conducted. The operations manager believed that maintenance is not her primary job; her primary job is system operations. Therefore, delving into maintenance activities and managing the maintenance program is something they do only on an exception basis. The primary measure of exception is repeat repairs.

Contractor selection. The selection criteria is not clearly identified in the invitation for bids (IFB). Although the IFB asks for price information, they do consider other attributes of the services offered. An important attribute of service is the priority placed on completing maintenance work on their vehicles. The operations manager noted that at one time the low bidder could not guarantee that the transit vehicles would be provided priority services. Therefore, they selected a contractor with a higher bid that could promise the vehicles would be given a high priority and would maintain the transit vehicles quickly.

INTERVIEW WITH CONTRACTOR

Maintenance management. The contractor has its own computerized maintenance management information system. The contractor has generated a specification for the preventive maintenance program of the transit vehicles. This includes what activities are to be included during periodic inspections. The activities are all identified in the computerized data base as well as by the condition of the vehicle at the last inspection. This service was provided by the automobile dealer and was not requested by the transit agency. The automobile dealer provides the transit agency with a comprehensive equipment maintenance report for each vehicle generated from their computerized equipment management system.

The automobile dealer has, to some extent, specialized in fleet maintenance. It conducts fleet maintenance for other governmental bodies and finds that the transit organization fits in well with the requirements of their other clients. Their largest client (in terms of work flow) is the Government Services Administration and the automobile dealer maintains a large number of vehicles related to fire fighting.

The contractor, because of the long term relationship with the transit agency, assumes a leading role in vehicle maintenance management. The contractor stated it is his job to see the vehicles receive the maintenance they need and that the maintenance is conducted correctly. The contractor even takes care of managing the towing subcontractor.

Drug testing. Although the contractor does not currently require drug testing, no difficulties were foreseen with drug testing requirements. The contractor seemed fairly certain that none of the current mechanics were taking illicit drugs and therefore, application of drug testing requirements was not seen as a critical problem.

CONTRACT SUMMARIES

The following are summaries of the contracting documents utilized by transit agencies that contract for maintenance services. In several cases, the agency contracts for maintenance and for route services. The agencies reviewed include the following:

- Columbia County Transportation, St. Helens, Oregon
- Developmental Services of Northwest Kansas, Hill City, Kansas
- Jefferson Transit Authority, Port Townsend, Washington
- KIBOIS Area Transit System, Stigler, Oklahoma
- Kennebec Valley Community Action Program, Waterville, Maine
- Lorain County Transit, Elyria, Ohio
- Minnesota Transit Service, Moorehead, Minnesota
- Northwest Alabama Council of Local Governments, Muscle Shoals, Alabama
- PACE, Arlington Heights, Illinois
- Port Angeles Pupil Transportation Center, Port Angeles, Washington
- Preston County Senior Citizens, Inc., Preston County, West Virginia
- Richland County Transit Board, Mansfield, Ohio
- City of Rochester, Rochester, Minnesota
- SIEDA Integrated Transit System, Ottumwa, Iowa
- Springfield City Area Transit System, Springfield, Ohio
- Warren County Transit Authority, Warren, Pennsylvania
- York County Community Action Corporation, Sanford, Maine

COLCO TRANSPORTATION
ST. HELENS, OREGON

Materials received include: service contracts between COLCO and the following individuals or organizations: Neal E. Davis; Riverside Training Center; Columbia County Community Action Team (CAT); Lower Columbia Community Action Program; Jo Jo Man, Inc; Teddy Bear Day Care Center; Columbia County Retired Seniors Volunteer Program (RSVP); and the Scappoose School District 1J.

Contract term: varies with each contract.

Services listed: provides demand responsive, door-to-door, dial-a-ride and scheduled fixed route service for persons in Columbia county; receives Section 18 funds;.

Common elements of agreements: all contracts specify that COLCO shall provide necessary insurance on vehicles and passengers, except the Riverside Training Center Contract; all drivers must go through COLCO driver training program and must submit to a drug test after implementation of program in December 1990.

COLUMBIA COUNTY TRANSPORTATION
(COLCO)

Transit Services Provided

Columbia County Transportation (COLCO) receives Section 18 funds and provides public transportation service for persons in Columbia County. The county has a population of less than 37,000 people of which approximately 66 percent live in rural areas and over 20 percent are over the age of 55. COLCO Transportation provides van and bus service for the five major cities in the county. Cities which comprise COLCO's five transportation divisions are Clatskanie, Rainier, St. Helens, Scappoose, and Veronia. Annual ridership is around 120,000 trips serviced by 21 vehicles. Demand-responsive, door-to-door, dial-a-ride service is available in each of the five transportation areas plus fixed route service in St. Helens. COLCO also provides special transportation services such as wheelchair van lifts, prescription pick up and delivery, hot meal and grocery delivery, and transportation to and from medical facilities, employment, recreation, meal sites, laundry, local stores and social activities.

The Transportation Manager has overall responsibility for the Transit System and works with the individual senior citizen organizations of the five communities, city officials and other organizations to coordinate transit needs. The Columbia County Council of Senior Citizens, Inc. was organized originally to provide the elderly and disabled with transportation service. Council members are selected representatives of each community's senior organizations. Upon receipt of Section 18 operating funds the service became open to the general public.

Contract Summary

The following are overviews of various service agreements between COLCO Transportation and other organizations and individuals within the five communities.

Maintenance and operations contracts. COLCO Transportation, through St. Helens Senior Citizens, Inc., and Neal Davis (Contractor) have a maintenance contract for COLCO vehicles assigned to the St. Helens area. The Contractor is to perform lube, oil and filter change services to vehicles every 4,000 miles and minor tune ups as warranted at a predetermined location. The Contractor is responsible for maintaining a written record of services performed and for completion of monthly maintenance forms. Compensation is 6.00 dollars per hour for labor, paid monthly. Reimbursement for all parts purchased to maintain vehicles will be paid upon presentation of receipts. The Contractor is considered independent and therefore responsible for all applicable Federal or State taxes.

The Columbia County Community Action Team (CAT -- the Agency) and COLCO Transportation (the Contractor) have a service agreement for the transportation of students and personnel involved in the "Latch Key" program in both the St. Helens and Rainier service areas. COLCO Transportation is to furnish all drivers and vehicles, and pay for all costs applicable to the transportation of riders. COLCO must provide throughout the school year, two 15 passenger vans for the Rainier and St. Helens areas which are safety equipped, maintained and repaired in accordance with the State of Oregon Public Transit Division. All COLCO drivers must have a valid Oregon Chauffeur's license, and also must have completed a Defensive Driving Course within the last 12 months and an approved First Aid Course within the last 24 months. COLCO Transportation is reimbursed its actual costs for transporting participants in the Latch Key program. Actual costs include drivers' salaries and benefits, actual gasoline and oil, 15 cents per mile for wear and tear, and 25 dollars monthly for administrative expenses. Actual costs may be adjusted monthly based on expenditures through an escalation clause. Mileage for the Rainier program is specified to be 23.1 miles daily; daily driver expense is 7.02 dollars; and a yearly total is based on service for 22 days a month, nine months a year. No specific information for St. Helens is offered. COLCO is responsible for insurance.

COLCO Transportation (the Contractor) and Riverside Training Center (the Agency) have a service agreement in which COLCO will provide transportation of Riverside Training Center clients from their residences in the Scappoose and St. Helens Transportation service areas to the Riverside Training Center. Riverside Training Center will provide COLCO Transportation with a 15 passenger van. The van is to be based at the St. Helens Riverside Training Center Group Home and COLCO is to ensure that the vehicle is safety equipped, maintained and repaired in accordance with the State of Oregon Public Transit Division. COLCO Transportation is to furnish all drivers and pay for all costs necessary for the transport of clients to the Riverside Training Center. COLCO is accountable for each repair up to 100 dollars and for tires. The Agency is responsible for any repair costs in excess of 100 dollars and for costs which result from excessive equipment usage not directly related to specified service. The Agency has the option to use COLCO vehicles for out of town recreational trips if they are not in service and is responsible for retaining its own qualified drivers for evening, weekend, or out of town trips. The Contractor may use the vehicle in conjunction with the Agency's passengers who wish to use the service, given available space. All COLCO drivers must have a valid Oregon Chauffeur's license, also having completed a Defensive Driving Course within the last 12 months and an approved First Aid Course within the last 24 months. COLCO Transportation is reimbursed its actual costs for

transporting clients and other personnel of the Riverside Training Center. Actual costs include drivers' salaries and benefits, actual gasoline and oil, 10 cents per mile pre-maintenance cost and 25 dollars monthly for administrative expenses. Actual costs may be adjusted monthly based on expenditures through an escalation clause. Riverside Training Center is responsible for insurance only on the vehicle it supplies to COLCO.

COLCO Transportation (the Contractor) and the Lower Columbia Community Action Program (the Agency) entered a service agreement in which COLCO agreed to furnish a wheelchair lift equipped vehicle and driver to the Agency until the vehicle normally used by the Agency returned to service. Services are scheduled from 7 a.m. - 7 p.m., Monday through Friday, or as requested per occurrence from Lower Columbia Community Action Program Clients. The Agency will reimburse COLCO for actual cost. Actual costs were calculated in two ways. First, within the Longview, Kelso City limits, costs were determined to be 8.06 dollars an hour. Second, outside of aforementioned limits, costs were based on 62 cents per mile. Regardless of time worked, drivers are compensated for a minimum of four hours, therefore minimum daily billing is 32.24 dollars. COLCO Transportation is to maintain vehicle and passenger insurance.

COLCO Transportation has a service agreement with Jo Jo Man, Inc., and Teddy Bear Day Care Center to provide one vehicle and driver and to pay for the transportation of kindergarten students from two different schools to the Teddy Bear Day Care Center. COLCO is compensated for actual costs, which vary depending on the school. For one school, charges are 1.25 dollars per student with a daily minimum of 3.70 dollars, the other school's charges are 0.50 dollars per student with a daily minimum 1.50 dollars. COLCO is responsible for vehicle and passenger insurance, and workman's compensation insurance for all the drivers.

COLCO Transportation had a service agreement through March, 1991 with the Columbia County Retired Seniors Volunteer Program (RSVP). COLCO agrees to furnish transportation for RSVP Volunteers in Columbia County to and from their work stations from 8 a.m. - 4 p.m., Monday through Friday, or as otherwise coordinated. Transportation to station will be reimbursed to COLCO; transportation from the station to home is considered an in-kind contribution from COLCO to RSVP. COLCO is responsible for maintaining and providing ridership and cost information to RSVP. COLCO is reimbursed a flat fee of 361.66 dollars monthly for services, with no escalation provisions. COLCO must maintain insurance for vehicles and passengers.

COLCO Transportation entered a service agreement with the Scappoose School District to transport Benjamin Fitzgerald from his residence to and from school. COLCO must furnish a wheelchair lift equipped vehicle, drivers and pay for actual transportation costs. Determined actual costs include the drivers' salaries and benefits, gasoline and oil and 15 cents per mile wear and tear. Actual cost for transporting Mr. Fitzgerald each way are 3.75 dollars, or 7.50 dollars round trip. Reimbursement is monthly based on services submitted. Vehicle and passenger insurance coverage is COLCO's responsibility.

DEVELOPMENTAL SERVICES OF NORTHWEST KANSAS (DSNWK)

Material received include:

contract agreements between Developmental Services of Northwest Kansas (DSNWK) and the following individuals or organizations: Winters FINA and Rick Cunningham, both of Hill City; Farmers Cooperative Association and Ken Maaske both of Atwood; the Kansasland Tire Company, Inc. representing the communities of Hays and Norton.

Contract terms vary with contract.

Services listed:

fixed route and demand responsive service; maintains vehicle fleet of 26; receives Section 18 funds.

Common elements of contracts: all contracts specify the preventive maintenance tasks to be performed, and that the DSNWK will supply needed materials and parts for maintenance.

DEVELOPMENTAL SERVICES OF NORTHWEST KANSAS

Transit Services Provided

The Developmental Services of Northwest Kansas transit system (DSNWK) receives Section 18 funds and maintains public transportation. The transit system provides fixed route and demand responsive service to the counties of Ellis, Graham, Hays, Rawlins and Russell. Services are paid based on the cost of work elements performed. Developmental Services of Northwest Kansas employs a Coordinator of Transportation. The Coordinator is responsible for the oversight of maintenance contracts which entails supplying Contractors with maintenance and minor repair schedules and parts. The various Contractors perform preventive maintenance, and schedule vehicle maintenance and repair services as approved by the Coordinator of Transportation.

Contract Summary

Maintenance services to be provided. The following overviews are of various maintenance contracts between DSNWK and individuals and organizations within the system's service area. Common contracts elements are listed, along with any specific items relevant to a given agreement.

Maintenance contracts with businesses in Hill City, Atwood, Hays and Norton all contain the same basic preventive maintenance tasks. Contracted maintenance services include oil change, engine tune up, alignment, replacement of belts and hoses, etc. The scheduled preventive and minor repairs are done through the designated staff person at each facility if tasks are done between 8:30 a.m. and 4:00 p.m., Monday through Friday, and through each community residence, where each vehicle is located if tasks are completed after 4:00 p.m. on weekends. Contractors must supply their own tools. Hill City and Norton Contractors must also provide their own facilities. The Coordinator of Transportation for DSNWK provides the necessary parts and materials for each preventive maintenance task or minor repair work. Contractors in both Atwood and Hays shall give priority service to DSNWK vans and must notify the Coordinator whenever a repair will cost more than 100 dollars for labor and parts combined. All contracts have preset preventive maintenance pay schedules. Any maintenance repairs excluded from maintenance schedules will be billed according to an hourly labor rate (the four Contractor labor rates range from 5 to 22 dollars). Contractors are compensated monthly for maintenance and repair work performed, based on established rate schedule, and at an hourly rate for additional work not on rate schedule. All contractors must possess and provide to DSNWK a copy of a Class B driver's license and carry personal liability insurance. Contractors are not entitled to DSNWK benefits.

Two contractors, one located in Atwood and the other in Hill City, also maintain contracts with the DSNWK transit system. The contractor's responsibilities include scheduling vehicles that need preventive maintenance in their respective city notifying the Coordinator when vehicles need breakdown repair, obtaining the Coordinator's requisition approval, and submitting completed repair and maintenance receipts to the Coordinator.

The DSNWK is responsible for insurance protection for both parties, supplying the contractor with monthly preventive maintenance supplies, and for reimbursing the contractor for performing maintenance tasks at a rate of 4 dollars per hour.

JEFFERSON TRANSIT AUTHORITY
PORT TOWNSEND, WASHINGTON

Material received includes:
maintenance contract.

Contract terms:
September 1, 1988 to August 31, 1990. Terms may be renegotiated upon mutual agreement of both parties to reopen contract. Termination of contract is allowed if intent to terminate is given 120 days prior to termination date.

Services listed:
fixed route, demand responsive and ridesharing/vanpool service; maintains fleet of 4 vehicles; receives Section 18 funds.

JEFFERSON TRANSIT AUTHORITY

Transit Services Provided

The Jefferson Transit Authority (the "Authority") receives Section 18 funds and provides public transportation in Jefferson County by bus and other motor vehicle equipment. At the time of the contract, the Authority retained the contractor (the Chimacam and the Port Townsend School Districts, also referred to as the "Cooperative") for the joint use of their maintenance facility. The contractor provides facility, preventive and mechanical maintenance, and service and repair for the Authority's vehicles and equipment. Services are paid for monthly, on a time and materials basis.

Contract Summary

Maintenance services to be provided. The contractor provides routine preventive maintenance, and maintenance and repair of engines and drive trains, mechanical parts and accessories. Maintenance services include engine repair and tuning, brake repair and wheel bearing service, electrical system repair and replacement of oils and lubricants. Tire service and replacements, wheel balancing, alignment, and drive train maintenance may all be contracted with a third party. The Authority is responsible for contracting with an outside source for automatic transmission repairs and general body damage. The contractor, if requested, will provide personnel for the cleaning and washing of transit vehicles at its maintenance facility at a rate of one-third the shop rate, and also personnel for emergency service and assistance. In the event of modification to the maintenance facility, the contractor may present plans and cost estimates, but the Authority must bare the expense of improvements on its behalf. The Cooperative is responsible for billing and for itemizing the work performed and parts installed upon each vehicle monthly, but a computerized billing system is not specified.

Facility and equipment requirements. The contractor must make available at the facility "key-lock" and pump facilities at no cost to the Authority. The Authority must pump its own fuel. The Cooperative will invoice the Authority for diesel and gasoline consumed at the facility with no mark-up or price margin imposed.

The Authority may request the contractor to provide cleaning and washing of transit units at the maintenance facility. The contractor must provide limited vehicle parking for the Authority vehicles.

The Authority must provide any additional major tools which are required only by Jefferson Transit vehicles but are not required by the contractor's vehicles. The parties shall not commonly own any personal or real property.

Parts requirements. No parts requirements are defined, only cost provisions. If a part is under 100 dollars, then it is billed at acquisition costs plus five percent (this excludes fuel, grease, oil, and antifreeze which are billed at cost). If a part is over 100 dollars, then it is billed at acquisition cost only. The Authority must reimburse the contractor for sales tax on all parts, as well as on fuel, grease, etc.

Service quality requirements. The Cooperative warrants and guarantees that all work performed by it, its agents, and employees, will be completed in a timely manner and of good quality and workmanship. Time length specifications and good quality and workmanship are undefined. No warranty applies to parts or materials used in repairs.

The Authority will receive emergency assistance equal with other vehicles in the Cooperative fleet, and will receive priority service for all work needed such that service does not adversely affect the Cooperative's work on behalf of the School Districts. If the contractor is unable to respond to an emergency, then the Authority is responsible to secure services on its own.

The contract does not incorporate a drug testing program.

Pricing of service. Maintenance service prices are based on a shop rate of 32 dollars per hour during normal Cooperative hours, and 38 dollars per hour for emergency or overtime services, plus material costs and taxes. No time standard per job is specified. Parts under 100 dollars are billed at cost plus 5 percent, whereas parts over 100 dollars are billed at cost only. The Cooperative guarantees the rates specified in the section over the contract duration. The Authority establishes its own vehicle maintenance schedule and is responsible for delivering vehicles to the Cooperative facility according to a mutually agreed upon schedule.

Information provided to contractor to base bid. A list of potential work items is included in the contract. Examples include: engine repairs and tuning, brake repairs and wheel bearing service, drive train maintenance, electrical system repair, and oils and lubricants replacement.

Miscellaneous requirements. The contractor provides 5,000,000 dollars comprehensive liability insurance including automobile insurance, and must show proof of coverage of the Cooperative, its employees and agents. Written notice to contracting parties must be given 30 days prior to insurance cancellation.

KIBOIS AREA TRANSIT SYSTEM (KATS)
Sigler, Oklahoma

Materials received include:

public notice used in soliciting bids and private market responses to bid, with the bid letter to be used as basic part of contract.

Services listed:

fixed route, demand responsive, user-side subsidy and ridesharing/vanpool services; maintains vehicle fleet of 26; receives Section 18 funds.

KIBOIS AREA TRANSIT SYSTEM

The Kibois Area Transit System (KATS) receives Section 18 funds and provides public transportation within LeFlore County. KATS publishes a public notice to all contractors interested in providing bus fleet maintenance service to KATS. After receiving all bids, KATS negotiates a contract for service incorporating the bid letter as the basic part of the contract. KATS reserves the right to obtain service elsewhere if the primary contractor cannot perform the service in a "timely manner."

Contract/Bid Summary

The public notice specifies that all parties submit bids in writing and defines a list of information to be included in bid letters. The basic elements of the bid include the following and are based on price: 1) base hourly shop rate; 2) parts costs (based on the jobber price list), also indicating percentage of markup; 3) wrecker service and 4) road service call if applicable. All bids are to be based on service work being done in the LeFlore County area on KATS vehicles.

KENNEBEC VALLEY COMMUNITY ACTION PROGRAM
KVCAP TRANSPORTATION SERVICES
WATERVILLE, MAINE

Materials received include:
contract and RFP.

Contract terms:
the contract shall be effective from July 2, 1990 through June 30, 1991, unless otherwise terminated in accordance with contract provisions.

Services listed:
fixed route and demand responsive service; maintains fleet of 7 vehicles, receives Section 18 funds.

KENNEBEC VALLEY COMMUNITY ACTION PROGRAM
TRANSPORTATION SERVICES

Transit Services Provided

The Kennebec Valley Community Action Program (KVCAP) receives Section 18 funds and provides fixed route, demand responsive public transportation service in Kennebec and Somerset counties. At the time of the last letting of their service contract, KVCAP operated a fleet of seven vehicles consisting of three passenger buses and four vans. The Contractor provides preventive and major maintenance, service and repair for the vehicles and a vehicle storage area free from snow. Services are paid for on a time and materials basis.

Contract Summary

Maintenance services to be provided. The contractor provides routine preventive maintenance (every 3,750 miles for all KVCAP vehicles), inspections, major engine and transmission repair, tire change, front end alignments, towing and other road services. All repair work must be approved by an authorized KVCAP representative prior to being completed. The contractor had to submit its own preventive maintenance schedule in the Service Proposal -- none was included in the RFP.

Facilities and equipment requirements. The contractor must supply an area that is adequate to park a minimum of four vehicles. The parking area must be free from snow in order to allow KVCAP vehicles to maintain their schedules. The Service Contract was based on the GM Maintenance Schedule with GM parts specified on the schedule.

Pricing of services. The contractor performs repair and maintenance work on vehicles at a rate of 30 dollars per hour for general labor and at rates as submitted in the "Service Proposal" for routine maintenance. Parts used for repair and maintenance of KVCAP vehicles are priced at a 25 percent discount from the list price. Towing service for vehicles at a rate of 1.05 dollars per mile plus 5 percent for administrative fees is provided.

Information provided to contractor to base bid. The Request for Proposal states that KVCAP was securing proposals for the service and storage of seven vehicles in the greater Augusta area. Information given to base bid was the number of vehicles and hours of operation. There was no information on past maintenance requirements or hours spent on maintaining the fleet. KVCAP operates on a purchase order procurement system.

Contractor selection criteria. Contractors were evaluated based on their service proposals and compliance with equal opportunity employment standards.

Insurance requirements. The contractor agrees to maintain a mechanics liability insurance policy with a minimum liability limit of 300,000 dollars to protect against personal injury resulting from gross negligence while performing repairs or maintenance.

LORAIN COUNTY TRANSIT
ELYRIA, OHIO

Material received include:
maintenance contract and bid package.

Services listed:
fixed route and dial-a-ride service; maintains fleet of 25 vehicles; receives Section 9 funds.

LORAIN COUNTY TRANSIT SYSTEM

Transit Services Provided

The Lorain County Transit System provides public transportation using 16 vehicles -- 7 buses and 9 vans. The Contractor provides routine preventive maintenance service, inspections, and emergency road service. Services are paid based on a time and materials basis to a maximum limit of 30,000 dollars annually.

Contract Summary

Maintenance services to be provided. The contractor provides routine preventive maintenance every 3,000 miles, primary inspection every 6,000 miles (oil, fuel, filters and water change), power train inspection every 18,000 miles, and clinical inspection (covers all items not previously inspected) every 36,000 miles, and emergency road service. The Contractor establishes and maintains all accounting and personnel records. No computer system is specified. All contract amendments must be in writing and mutually agreed upon by the Contractor and the Lorain County Transit Board.

Facilities and equipment requirement. The contractor must maintain adequate parts and equipment to ensure that service needs are met. Maintenance equipment to be provided by the contractor includes hoist, pit, drill press, grinder, power hand tools, hydraulic press, welding, test and diagnostic equipment, and a vacuum pump.

Parts requirements. The contractor is to provide a storage area. All parts owned by Lorain County Transit Board are to be stored by the Contractor in a secured location next to the work site.

Service quality requirements. The contractor is to perform work in a practical, sound, economical and efficient manner that meets contract and legal requirements. The contractor is to fulfill all manufacturer's warranty obligations. A description of the mechanic's experience in relation to diesel engines, transmission, air conditioning, air brakes, and air suspension repair, as well as work experience in painting, electrical and bodywork is requested. It is unspecified, however, how mechanic's qualifications are part of the selection criteria.

Pricing of services. The contract has a ceiling price of 30,000 dollars. Services are reimbursed based on the number of inspections and various jobs completed (labor and parts costs are given). The Lorain County Transit Board will reimburse the Contractor for services thirty days after receipt of invoice(s). No escalation method is addressed.

Information provided to contractor to base bid. The contractor is furnished a list of equipment specifications, inspection schedules, items to be included in inspections, and a routine job list.

Contractor selection criteria. In general, the qualifications and eligibility of the contractor for the project is emphasized. Specifically, bidders are reviewed in terms of their responsiveness to requirements, terms and conditions of request, program objective understanding, approach methodologies, and ideas presented. Qualifications of personnel is also evaluated, but influence on selection is not specified. The Contractor is required to submit a list of current vehicle maintenance contracts.

Insurance requirements. Insurance to cover vehicle and property damage, fire, theft and casualty insurance are the Contractor's responsibility.

Miscellaneous requirements. The contractor is required to provide a security and a performance bond. The security bond protects acceptance of the contract in the amount of 2 percent of total bid; and the performance bond is 20 percent of the total contract.

CITY OF MOOREHEAD, MINNESOTA TRANSIT SERVICE
MOOREHEAD, MINNESOTA

Material received include:

operations contract and addendum.

Contract terms:

the contract commenced on January 1, 1987 and terminates on December 31, 1991. If one of the parties declares that the other is in default and the party does not cure the default within 15 days then the matter goes to arbitration. If the arbitrator rules that the contract may be terminated, service must be continued for a thirty day period following decision.

Services listed:

small urban fixed route, college paratransit and specialized services provider, maintains a fleet of 12 vehicles; receives Section 9 funds.

CITY OF MOOREHEAD, MINNESOTA TRANSIT SYSTEM

Transit Services Provided

The transit system receives Section 9 funds and provides services for the city of Moorehead, Minnesota (the City). The City, at the time of the last letting of their operations contract, operated 12 buses. The vehicles provide fixed route bus service, college paratransit and specialized services for the elderly and disabled. The Company agrees to lease from the City (for one dollar) all equipment needed for the operation of the public transit system. The Company must provide necessary operations and maintenance personnel, maintenance service, alternate equipment, fueling and cleaning service, and inside storage for vehicles. Services are paid for monthly on a rate per hour basis to the Company.

Contract Summary

Maintenance service to be provided. The Company agrees to provide personnel, follow a daily preventive maintenance program, maintain vehicles to warranty standards, perform body repair, and provide cleaning and fueling service. The Company provides and maintains individual unit logs for each vehicle, which include entries for maintenance, fuel usage, daily inspections and driver pre-trip inspections, mileage, work orders, repair suggestions, deficiencies, hours of operation and any "reasonable" record-keeping request in conjunction with accident reports.

Facilities and equipment requirements. The Company must provide an indoor storage area for all twelve vehicles. The Company further agrees to wash the inside and outside of vehicles daily when in public use.

Service quality requirements. Service performed by the Company will be performed in a "diligent" and "competent" manner and is subject to inspection at all "reasonable" times. Alternate vehicles must be provided by the Company if they are unable to make timely repairs to vehicles. The Company must conform to any warranty on specific equipment, materials, parts, or vehicles. The Company is liable for any negligence if warranty work is not performed satisfactorily. Leased vehicles and City owned materials, parts or tools must be returned to the City upon termination of the contract. The Company agrees to provide courteous drivers properly and neatly attired per the City's " Wearing Apparel for MAT Bus Drivers." Drivers must be licensed in Minnesota; there are no mechanic qualification provisions listed.

Pricing of service. The Company is reimbursed by the City based on an operating rate per hour. The rate includes all maintenance and service costs, salaries and employee benefits, insurance, payroll expenses, accounting and management fees, taxes, inside storage costs, and all other applicable operating costs. Upon changes in service levels, the projected hours of service may be reevaluated and the hourly rate adjusted accordingly. The operating rate per hour will be reviewed annually. The City will provide a minimum of 750 bus hours of service per month, and shall receive all fares and revenues collected from the system. The City must reimburse the Company directly for fuel used in providing public transit.

Information provided to contractor to base bid. Bus specifications are given, although there is no specific information from past maintenance records on which to base a bid. The contractors are provided a list of employee salaries and benefits, the number of employees required to perform service, and the number of hours to be worked by each employee. The Company is not required to use City employees.

Insurance requirements. The State of Minnesota Public Utilities Commission will decide on the amount of general and liability insurance the City and the Company will need to secure. Both parties agree to furnish one another with copies of insurance policies and premium costs.

Miscellaneous requirements. All route scheduling and marketing decisions, including promotional and advertising, are the responsibility of the City.

NORTHWEST ALABAMA COUNCIL OF LOCAL GOVERNMENTS
MUSCLE SHOALS, ALABAMA

Material received include:

Request for Proposal, (used as basic element of maintenance contract), evaluation criteria, and proposal forms.

Contract term:

the Council has funding for 12 months, with services scheduled to commence October 1, 1989.

Services listed:

fixed route and demand responsive service, maintains vehicle fleet of 12; transit system receives both Section 18 rural funds and Section 9 urban funds.

THE NORTHWEST ALABAMA COUNCIL OF GOVERNMENTS

Transit Services Provided

The Northwest Alabama Council of Government (the Council) receives Section 18 Rural Transportation Project and Section 9 Urban Transportation Program funds for the maintenance of the public transportation system in the Florence Urban Area (includes Sheffield, Tuscumbia, Muscle Shoals, and Florence), Colbert, Lauderdale and Franklin Counties. The Contractor's primary purpose is to establish a centralized maintenance program to improve the quality of maintenance in a cost-effective manner. This program is designed to perform all major vehicle repair tasks. The Contractor is responsible for preventive maintenance in order to prevent mechanical failures and breakdowns and to identify minor mechanical problems. Services are paid for monthly, based on repairs performed.

Contract Summary

Maintenance services to be provided. The contractor is responsible for establishing an effective preventive maintenance program which includes driver pre-trip inspections, monthly inspections, tune ups, tire replacement, minor repair work, etc. The Contractor is to establish a maintenance program for all maintenance and repair services the Council may need, including parts, transmissions, towing and emergency road service. The Contractor is responsible for maintenance records (mechanical defect correction report, monthly inspection and service maintenance check-out, and the vehicle service and repair record), ordering and maintenance of parts inventory, and financial reports. Contractors may propose changes in RFP under negotiating that will maximize the use of their resources or operations.

Facilities and equipment requirements. The contractor furnishes the maintenance facility for performing all major vehicle repair tasks. The Contractor must have trained personnel and equipment to perform major repairs in-house; any sublet work requires Council approval. All sublet repair work is awarded to the lowest responsible bidder out of three. The Council has three relief vehicles that may be utilized while repair work is performed.

Parts requirements. The contractor is responsible for obtaining parts from the state bid list and for maintaining records regarding parts purchased from a designated vendor. If the contractor is unable to purchase parts using the state bid list, then it must be verified that parts were purchased at the lowest available price. All defective parts and/or removed or replaced parts are to be returned to the Council or be available for inspection.

Service quality requirements. Twenty-four hour advance notice is given to the contractor for minor repairs. The repairs must be completed within 8 hours after receipt of the vehicle. The contractor is required to state the time required to complete all major repairs. All maintenance service must be defect-free in materials and workmanship. Any material which is defective or fails to meet Federal Safety Standards must be replaced by the contractor at its own expense.

Pricing of services. The price of maintenance is determined by a rate per hour for labor and a percentage over cost for parts.

Information provided to contractor to base bid. The bidding documents include the RFP, evaluation criteria, proposal forms and standard subcontract clauses. The Contractors are given an outline of proposal requirements which are expected to be addressed in their bids. Requirements include operational management and technical competence (which requires firm cost per hour with regard to Chilton Labor Manual or a comparable publication). The RFP also states that the contractor's bid price on parts (before agreed mark-up) shall not exceed Alabama State bid price on parts.

Contractor selection criteria. The proposed cost, including maintenance costs, rate per hour and percentage rate per parts over cost, is the primary evaluation criteria for the determination of reasonable cost. Operational management ability and technical competence are also evaluation criteria. The three factors are weighted differently and points are allotted for each. For example, the subcategory of "hourly labor rate" under Total Cost receives the same weight as the category Operational Management. The proposals are also evaluated in terms of overall reasonableness.

PACE
ARLINGTON HEIGHTS, ILLINOIS

Materials received include:

operations and maintenance contract, lease agreement.

Contract terms:

January 1, 1990 to December 31, 1991. Pace has the option to extend the contract for an additional two years through December 31, 1993.

Services listed:

dial-a-ride service; receives Section 9 operating funds.

PACE

Transit Services Provided

The Suburban Bus Division of the Regional Transportation Authority, an Illinois Municipal Corporation, referred to as Pace, receives Section 9 funds and provides transportation services for persons in suburban Chicago. Pace provides public curb-to-curb, dial-a-ride service on a subscription basis and also provides service to people with disabilities. The contractor provides operation and maintenance (preventive and corrective) and repair service, vehicle cleaning, route and service area designations. Services are paid for based on a flat rate per vehicle service hour.

Contract Summary

Maintenance services to be provided. The contractor upon acceptance of leased equipment is responsible for maintenance and repairs, at its own expense (except for repairs are reimbursable under the manufacturers'

warranty). The Contractor must follow a preventive maintenance schedule which will ensure full validation of the manufacturers' warranty with respect to equipment and perform all work at its own facility. The contractor must maintain proper oil, battery, and cooling levels, and protect the vehicles against freezing of the radiator and engine. The contractor must provide and maintain vehicle maintenance records, fuel consumption records, a monthly report of passenger trips per day, vehicle hours and mileage logs, and other operational records required in the maintenance reporting requirements. Amendments to the contract must be written and mutually agreed upon by both parties.

Facilities and equipment requirements. The contractor is to provide a secured storage area for vehicles and equipment. An electric block and/or oil pan heater must be provided for any vehicles stored outside. The contractor must store equipment either at its business or at a facility approved by Pace in writing. The contractor is responsible for maintaining a repair facility which has the capabilities to perform and repair all maintenance functions necessary to operate the leased equipment and vehicles. The Contractor will provide vehicle cleaning, washing and polishing. The contractor agrees to use only tires furnished by Pace on its vehicles (tires are covered through a tire vendor).

Parts requirements. The contractor is responsible for all major repairs to the engine, transmission, air conditioning, etc. If a needed repair's part cost exceeds 600 dollars, according to the manufacturer's current parts price list, the Contractor must receive Pace's written approval. All parts over 600 dollars are replaced at Pace's expense. When a new part costs over 600 dollars, the Contractor must obtain written permission to purchase a satisfactory rebuilt part. The contractor is responsible for the installation of these parts and for the costs of all parts under 600 dollars. The contractor must use fluid brands required by the vehicle manufacturer or approved equals.

Service quality requirements. The contractor will perform all maintenance work not covered by a manufacturer's warranty. Any equipment maintenance deficiencies found through an inspection by PACE must be corrected in 30 days.

The contractor agrees to accept delivery of equipment at a location within a six county region from Pace, and is given the opportunity to inspect all equipment prior to acceptance. Upon contract termination the Contractor must return equipment at its own cost and expense, to Pace at their specified location, in the same condition as received and in good operating order, repair, or condition, reasonable wear and tear excepted.

In the event of severe weather and/or road conditions, strikes or other conditions beyond the Contractor's reasonable control, the carrier should notify Pace as far in advance as possible. The contractor will only be compensated for service actually provided.

Pace requires all the contractor's employees in safety sensitive positions to submit to the annual routine D.O.T. physical and pre-employment health evaluation, and to undergo drug and alcohol screening.

Pricing of services. The contractor reimburses Pace a one dollar per year per vehicle for operating the vehicle and using the equipment. The Contractor pays for all parts under 600 dollar and for their installation. The contractor is paid based on "vehicle service hours", Pace allows 1 hour of deadtime per day per vehicle. The number of service hours per month is multiplied by a flat hourly rate. On the average, Pace anticipates the contractor will operate a maximum of 18,820 one way trips annually. Fare revenue is deducted from the Contractor's monthly fee to determine Pace's reimbursement. Pace reserves the right to require the contractor to increase or decrease the maximum number of vehicle service hours operated per day.

Insurance requirements. The contractor is required to provide insurance, including 100,000 dollars in Worker's Compensation, 1,000,000 dollars in Comprehensive Liability and 1,000,000 dollars in Auto Liability. Certificates of insurance must be submitted to Pace prior to commencing work.

PORT ANGELES PUPIL TRANSPORTATION CENTER
PORT ANGELES, WASHINGTON

Material received include:
a maintenance contract and an amendment to the contract.

Services listed:
receives Section 18 small urban and rural funds, approximately 17 vehicles.

PORT ANGELES PUPIL TRANSPORTATION CENTER

Transit Services Provided

The Port Angeles Pupil Transportation Center, through the Clallam Transit System (the Authority), receives Section 18 small urban and rural program funds to provide public transportation. The Authority operates 17 to 19 vehicles. The Contractor (the Port Angeles School District) provides all routine and major maintenance service, transit vehicle cleaning service and emergency service. Services are paid for on a time and material basis.

Contract Summary

Maintenance service to be provided. The contractor is to provide routine maintenance, repair engines and drive trains (transmissions included), mechanical parts and accessories, transit vehicle cleaning equipment for Authority personnel and vehicles, equipment and personnel to respond to emergencies calls for Authority vehicles. The contractor is responsible for maintaining records of all services provided to the Authority. Dependent upon the installation of the Authority's computerized management information system at the contractor's facility, the Authority is responsible for providing the contractor with a necessary record keeping system. The agency benefitting the most from improvements will pay expense, if both parties equally benefit, then the cost is shared.

Facility and equipment requirements. Secured storage area for 17 vehicles must be provided by the contractor. The contractor is to provide installation space for propane fuel tanks at its facility, whereas, the Authority is responsible for the installation and maintenance of the fuel tanks. "Key-lock" and pump facilities are to be provided to the Authority free of charge by the Contractor, although the Authority must reimburse the contractor for fuel consumed. The Transit System's operation supervisor, maintenance supervisor, clerical clerk and dispatcher should be provided space and accommodations at the facility. The contractor's facility should be large enough to allow for radio area and equipment, office supplies and storage area, maintenance inventory area, employee training, and waiting and locker areas. The Contractor is to allow the Authority to use vehicle cleaning facility for the purposes of cleaning and maintaining fire extinguishers and first aid equipment.

Service quality requirements. The contractor warrants and guarantees that all work will be conducted in a timely manner, of good quality, and free of any negligent workmanship -- warranty is applicable to labor only.

Pricing of services. The contractor is compensated 6,000 dollars monthly for joint use of the facility with the Authority; this does not include phone service. Mechanics services are reimbursed based on flat rate of 25 dollars per hour for 3,125 hours a year, regardless if used or not. Any mechanic hours over 3,125 hours are priced at 30 dollars per hour to the Authority, and overtime is billed at 37.50 dollars per hour. The Authority must pay an additional 37.50 dollars an hour emergency services, which includes labor and service truck. The Contractor is reimbursed for costs plus 5 percent for parts under 100 dollars and at cost for parts over 100 dollars.

Insurance requirements. The Authority is responsible for provision of its own insurance. The contractor must secure worker's compensation insurance, commercial general liability coverage, auto liability, garage/garage keepers liability and a certificate of insurance.

PRESTON COUNTY SENIOR CITIZENS, INC.
RURAL TRANSPORTATION SYSTEM
PRESTON COUNTY, WEST VIRGINIA

Material received include:

contract and bid proposal for bus mechanical contractor.

Contract terms:

bid proposal is to be effective from July 1, 1990 to June 30, 1991; contract was begun in July, 1989 and was scheduled to terminate June 30, 1990.

Services listed:

provides fixed route service; vehicle fleet between 5 and 10; receives Section 18 funds.

PRESTON COUNTY SENIOR CITIZENS, INC.,
RURAL TRANSPORTATION SYSTEM

Transit Services Provided

The Preston County Senior Citizen, Inc. (the Commission) transit system receives Section 18 rural transportation program funds. At the time of the request for proposals, the system operated a bus fleet of between five and ten vehicles and provided fixed route public service. The contractor is to provide a facility, preventative maintenance program, major repair and overhaul service, maintenance records and scheduling, and emergency road and towing service. Service reimbursement is based on a flat fee per month with a defined maximum limit for preventive and general maintenance. Major repair and overhaul service reimbursement is based on a flat book rate per hour.

Contract Summary

Maintenance services to be provided. The contractor is to provide at its own expense all facilities, tools and equipment necessary for the dispatch and maintenance of vehicles, excluding a radio transmitter which is to be provided and maintained by the Commission. The contractor is to perform preventive and general maintenance, towing and emergency service and major repair or overhaul service as authorized by the Commission. The contractor is to develop a written preventive maintenance program of all vehicles. The contractor is responsible for the creation and maintenance of vehicle jacket files for the scheduling of preventive maintenance services and recording of all repairs, replacement parts and cost for all vehicle expenses and consumed oil. The contractor is also to provide the Commission with copies of each invoice together with the vehicle work order. The contract may be amended upon written notification of both parties.

Facilities and equipment. The contractor must provide a suitable location to repair a bus fleet of 5 to 10 vehicles. The location should be secure for a minimum of 3 buses at all times. The contractor must provide all equipment and tools necessary to maintain buses, including floor jacks, lubricating equipment, etc.

Service quality requirements. The contractor and facility must be available during route operation hours. After 3 days, if work is uncompleted due to insufficient materials or labor, the expense is deducted from the contract.

Pricing of services. A flat fee of fifty cents per mile will be paid for road service any time a mechanic is called out to work on buses. Any item of major repair or overhaul with estimated total parts and labor exceeding 100 dollars will require prior approval by the Commission. All parts and maintenance supplies shall be procured by the state purchasing procedure if available at a savings and in a timely manner. Otherwise, competitive shopping will be exercised, with the supplier billing the Commission directly for the parts. Preventive and general maintenance are billed on a flat rate per month and major repairs and overhauls are billed on an hourly rate based on a flat book rate -- or repair costs are to have two estimates from reputable shops recorded. The contractor is reimbursed for all preapproved travel associated with bus inspections, pickup and delivery of buses, etc.

Information provided to contractor to base bid. The RFP outlines the general responsibilities the contractor is expected to perform. The contractor is given a definition of what types of service constitute preventive and general maintenance, as well as major repair and overhaul.

Contractor selection criteria. Selection is based on price. The contractor must keep the total cost of preventive and general maintenance below 13,020 dollars annually, and the flat rate per month under 1,085 dollars. The Bidders must provide five references who can attest to their mechanical ability, dependability and qualifications.

Insurance requirements. The Preston County Senior Citizens, Inc., through Bus System funding will provide operating insurance on bus fleet.

Miscellaneous requirements. The Commission may withhold 2.5 percent of the total contract price from final payment to Contractor to ensure there is no tax default.

RICHLAND COUNTY TRANSIT BOARD
MANSFIELD, OHIO

Materials received include:
contract proposal and lease agreement.

Contract terms:
March 1, 1989 to February 28, 1994.

Services listed:
fixed route service; fleet consists of 27 vehicles, 3 service cars and a 1 ton truck; receives Section 9 funds.

RICHLAND COUNTY TRANSIT BOARD

Transit service provided

The Richland County Transit Board (the "Board" or "RCTB") receives Section 9 funds and provides public transportation by bus and other motor vehicle equipment. At the time of this contract, the Authority retained the Company (Holland Industries) to supply two types of fixed route scheduled service (regular and express) and dial-a-ride service for the handicapped. The Board operated 27 buses, 3 service cars and a one-ton truck. The Company provides all maintenance services and daily vehicle inspections. The Board supplies the fuel and the facility for the Company. It is the Company's responsibility to fuel buses and to provide for the care, maintenance and operation of the facility. Pricing of services is based on a fee per mile and the

equipment is leased at no charge. There are provisions for incremental wage rate increases over time for mechanics and drivers. The Company is reimbursed for services monthly.

Contract Summary

Maintenance service to be provided. The Company provides all personnel necessary for operation, maintenance and repair of vehicles, including those needed for inspections, testing, and/or preventive maintenance of the equipment and to repair, overhaul or replace all defective, damaged or worn out parts and components. The Company will provide fueling service, maintenance and cleaning of the facility, bus cleaning, and tire wear records (the RCTB provides the fuel and tires at no cost). The Company is required to maintain computerized financial, parts, and vehicle maintenance records, which include monthly ridership by route, driver- signed daily logs and daily farebox revenue lists. The Board supplies the necessary forms, equipment, software, and training. The system type is unspecified. The RCTB also provides the Company with a maintenance program and schedule. The Company may follow the program or develop its own maintenance program given that it is more stringent than the RCTB's. The Company is responsible for maintaining all licenses, permits and registrations necessary for operating the equipment.

Facility and equipment requirements. The Company will be responsible for the care, operation and maintenance of the facility, including utilities, although the facility is owned by the RCTB. There must be a telephone with two lines maintained during all service hours. The Company is responsible for fueling and cleaning the vehicles daily and also for cleaning the facility weekly.

Parts requirements. Parts must be the same type and specification as recommended by the vehicle and component manufacturer. Repair parts must be equal to or better than originals in terms of quality, specifications, and longevity, excluding rebuilt components such as air valves, starters, etc. which the component supplier must be approved by the Board. If parts are not immediately available, they must be ordered within ten days.

Service quality requirements. The RCTB inspects the vehicles and if required maintenance is not being performed, then the Contractor will be given 10 days to restore the vehicles. If the designated restorations are not performed within "a given" time frame, then the agreement may be terminated. The Company must return the vehicles in the same condition as received, with normal wear and tear accepted.

Required mechanic qualifications state that the Company must retain three experienced certified mechanics with a minimum of one year of experience in diesel engine repair. There is also a contract provision which states that for every fleet expansion of five buses a minimum of one certified mechanic and one assistant cleaner must be added. The Company must implement a drug testing policy consistent with State and Federal regulations by December 1990.

Pricing of services. The Company is given minimum hourly wage restrictions for mechanics, and driver's compensation with step increases based on years of service and incentive clauses. The General Manager or Operation Supervisor will be compensated based on the amount of public investment in equipment -- no flat or percentage rate of compensation is given. The Contractor must report any missed runs as part of its monthly invoice, wherein the appropriate mileage rate will be deducted from payment. If more than 1 percent of the runs are missed, the RCTB may terminate the contract. The equipment is leased to the Company for 5 years at no charge.

Information provided to contractor to base bid. The contractor is not furnished with any past information on the time required for jobs or specific maintenance performed on the equipment from which to base bid. The contractor is given a list of personnel requirements and wage guidelines for mechanics and drivers. The Board designates a specific schedule for preventive maintenance, records, parts and supplies, repair quality, outbound

trip inspection, 30 day/4,000 mile inspection, 120 day/16,000 mile inspection, 1 year/48,000 mile inspection, and major components. There is also a list of condition standards which include items such as cracked window glass, torn seats, etc. that will not be considered normal wear and tear by the Board and will require repair or replacement.

Contractor selection criteria. The Board bases its selection on price and other factors. The total price for the five year contract period is one evaluation factor. A cost analysis is done to determine the reasonableness of the proposals. Proposals which fall into a competitive range will be negotiated. Preference is also given to contractors who have five or more years of experience in operating a fixed route regularly scheduled service or similar work for a small or medium sized system. Points are deducted from contractor proposals which have less than 5 years experience. Other relevant criteria for selection purposes include the proposed staffing level including the qualifications of the manager (references may be required), the professional qualifications and reputation of the firm, a CPA prepared financial statement of the contractor, and a possible proposal presentation.

Insurance requirements. Vehicle liability, comprehensive general liability, fire and extended coverage on premises insurance will be purchased by the RCTB directly. The Company is responsible for the first 1,000 dollars damage to vehicles under the collision insurance.

Miscellaneous requirements. The Company must provide advertising space on the interior and exterior of all buses. The Board is responsible for vehicle alterations resulting from advertising, and will receive any revenues generated.

The contractor must make available the RCTB buses for charter when not in public use. The Company will keep 85 percent of any revenue and the RCTB will receive 15 percent.

CITY OF ROCHESTER
ROCHESTER, MINNESOTA

Material received include:

transit contracts for operation and maintenance.

Contract terms:

the contract begins January 1, 1990 and terminates December 31, 1990.

Services listed:

fixed route service (24 buses)and dial-a-ride service(5 buses); receives Section 9 funds.

CITY OF ROCHESTER, MINNESOTA TRANSIT SYSTEM

Transit Services Provided

The City of Rochester, Minnesota, receives Section 9 funds and provides public bus transportation within the city. The City utilizes 24 buses to provide scheduled fixed route service and 5 buses to provide dial-a-ride service. For both operations, the contractor provides preventive maintenance services, inspections, operations and support personnel. Reimbursement for the fixed route service is based on the lesser amount of a flat monthly rate or the total deficit of the contractor's expense. Service reimbursement for dial-a-ride is based on an flat hourly rate.

Contract Summary - Fixed Route Service

Maintenance services to be provided. The contractor provides, operates and maintains all buses and related equipment. Preventive maintenance services, including oil, lube and filter changes and inspections, are the contractor's responsibility. Employment of operators, mechanics and administrative personnel is the contractor's responsibility. Fueling service, tires, permits and licenses are to be furnished by the Contractor. The contractor is responsible for maintaining records and reporting data to the Urban Mass Transportation Association. The contract may be amended if both parties are in mutual agreement.

Facility and equipment requirements. The City of Rochester is to provide the bus garage for vehicles. Bus cleaning is a service the Contractor is expected to perform.

Service quality requirements. The contractor is to ensure that fleet operators are qualified and meet State and Federal requirements.

Pricing of Services. Service reimbursement is monthly and provides for adjustments or corrections in prices. Price of services equates to 842,473 dollars, or total deficit of contractor's expense, whichever is less.

Insurance requirements. The City of Rochester must maintain general liability insurance and motor vehicle insurance covering vehicle, property and bodily injury.

Contract Summary - Dial-A-Ride Service

Maintenance service to be provided. The contractor is to provide routine maintenance and all tools and supplies necessary to perform inspections, oil, lube and filter changes, replacement of fluids and tires, tune ups, tire replacement and other minor repairs. Additional items the contractor is responsible for include: alternative vehicles equipped with lift for wheelchair passengers; public relation insignia on vehicles; radio and communication equipment; facility for fleet maintenance and shelter with its own telephone service number and driver and support personnel employment. The contractor is to maintain records of maintenance and repair work performed, however no specific information on how information is to be recorded is offered. The contractor is allowed to develop routes that will further vehicle and service efficiencies.

Pricing of services. Services are reimbursed based on an hourly rate bid. The hourly rate bid should compensate for drivers, wages, dispatching, telephone, insurance, minor maintenance, and other equipment. The bid should also consider fuel tax exemptions. The City allocates up to 5,100 dollars for fuel annually, excluding State and Federal tax exemptions.

Information provided to contractor to base bid. The contractor is given the following information on which to base bid: operating procedures and policies; estimate procedures for labor and materials; daily checklist for maintenance requirements and special provisions and proposal specifications.

Contractor selection criteria. Contractor selection is based on the total of the lowest unit price of each task performed. Also evaluated were contractor's permanent place of business, plant and construction equipment possessed to ensure that work is done properly and expeditiously, and level of technical expertise possessed. The contractor is required to maintain a suitable financial status and the ability to meet contract obligations.

Insurance requirements. The contractor is responsible for maintaining general liability insurance to cover bodily injury, death and property damage. Comprehensive and collision insurance protection by contractor is required for City owned vehicles.

Miscellaneous requirements. A bid bond and performance bond are required.

SOUTHERN IOWA ECONOMIC DEVELOPMENT ASSOCIATION
INTEGRATED TRANSIT SYSTEM
OTTUMWA, IOWA

Material received include:

RFP; maintenance service specifications; and bid proposal.

Contract terms:

Contract for maintenance services is for a two-year term with costs renegotiated annually with an adjustment of no greater than 5 percent.

Services listed:

fixed route, demand responsive, user-side subsidy, ridesharing/vanpool services provided; maintains vehicles fleet of 39; receives Section 18 funds.

SOUTHERN IOWA ECONOMIC DEVELOPMENT ASSOCIATION
(SIEDA)

Transit Services Provided

The Southern Iowa Economic Development Association/ Integrated Transit System (SIEDA ITS) receives Section 18 funds and provides transportation services for persons within ten counties of Iowa Department of Transit Region XV. The counties served include Appanoose, Davis, Jefferson, Keokuk, Lucas, Mahaska, Monroe, VanBuren, Wapello, and Wayne. At the time of the Request for Proposal (RFP), the transit system operated a fleet of thirty-five vehicles. The Contractor provides maintenance services (preventive) and as stated in the RFP, has the option to provide vehicle cleaning, fuel servicing, parts and supplies storage, and vehicle storage services in their bid. Services are paid for on a monthly basis, and a fixed inspection fee is listed in conjunction with labor time for each job itemized on billings.

Contract Summary

Maintenance service to be provided. The contractor provides all personnel necessary for operation, maintenance and repair of vehicles, including the biannual maintenance and inspection of each vehicle. SIEDA approval is needed for any service that exceeds labor estimation guidelines by 6 minutes. After maintenance is performed and before a vehicle is released to a SIEDA driver, the Contractor must notify SIEDA of service completion. SIEDA reserves the right to inspect work during and after completion. All maintenance will be covered by a ninety day labor and parts guarantee. Labor costs will be adjusted if maintenance, considered to be a result of normal wear and tear, is performed within 90 days of a vehicle inspection due to failure to find a problem. The contractor is responsible for billing and for itemizing the labor time of each distinct job; a computerized billing system is not required. The contract is not subject to modification except by written amendment.

Facilities and equipment requirements. The contractor has the option to include facilities and equipment services at their own discretion. The proposed services will be rated for quality and bonus points will be awarded. The areas in which the Contractor may earn extra points are: 1) Section XXV: Vehicle Cleaning, 0 - 10 points, vehicle cleaning facilities are provided; 2) Section XXVI: Fuel Storage, 0 - 10 points, access to tank and pump are supplied to SIEDA ITS vehicles; 3) Section XXVII: Storage of Parts and Supplies, 0 - 25 points, separate facilities for parts storage and supplies are provided, evaluated in terms of square footage, element exposure, etc.; and 4) Section XXVIII: Vehicle Storage, 0 - 25 points, storage facilities or area provided for SIEDA ITS fleet vehicles provided as needed, evaluated on security, snow removal provisions, etc.

Parts requirements. The RFP, under optional extras, allows the contractor to propose separate facilities for the storage of parts and supplies if there is a cost savings to the SIEDA Integrated Transit System. The contractor agrees to purchase parts and supplies through certified Disadvantaged Business Enterprises or Women Business Enterprises (DBE/WBE) whenever possible, and must submit a statement with their bid to gain potential DBE participation. The contractor agrees to leave replaced parts on each vehicle repaired. If part replacement involves a trade-in, SIEDA staff is notified for a replaced parts inspection.

Service quality requirements. The company agrees that maintenance services necessary for a particular vehicle will be completed within a 24 hour period unless restricted by non-receipt of parts. All maintenance and parts shall carry a 90 day guarantee. SIEDA ITS staff may inspect Contractor's work in progress or upon completion. The contractor must furnish evidence that all employed personnel meet the requirements of all regulatory authorities involving transportation facilities and equipment. A drug testing program is not in effect, but the Contractor must agree to implement a testing program if required by law.

Pricing of service. Maintenance service prices are based on a fixed vehicle inspection charge and labor time for each job is itemized on billings. The material parts/labor guide is used in billing labor. The RFP states SIEDA must approve labor time which exceeds guide estimations by a tenth of an hour, while the Bid Proposal states SIEDA must be notified by phone for approval of labor time in excess of 30 minutes in the material parts/labor guide. The contract is subject to renegotiation annually, although no adjustment greater than 5 percent is allowed. Essentially, costs are fixed, since there is no provision for cost reductions or escalation throughout the year.

Information provided to contractor to base bid. The RFP and bidding documents included the following elements and worksheets for prospective Contractors: preventive maintenance program schedule; a schedule of prices to complete which includes space to estimate labor rate, parts cost, maintenance costs; and a DBE/WBE certification for non-rolling stock items form.

Contractor selection criteria. SIEDA requested the bidders to provide prices for maintenance, parts plus a fixed fee, and the optional extras. Points are awarded to all bidders who submit labor rates, and bonus points may be awarded for bidders who submit proposals for Sections VVX -- VVXIII. SIEDA reserves the right to accept the proposal which appears to be in the best interest of the transit system.

Insurance requirements. The contractor provides insurance for all vehicles and supplies housed within the Contractor's facilities. The Contractor agrees to provide documents displaying coverage. Vehicles parked on contractor's premises, but not within the facility, will be covered by insurance carried by SIEDA.

Miscellaneous requirements. SIEDA reserves the right to withhold payment if services are unsatisfactorily performed, falsified documents are presented, conflict of interest provision is violated, or if services performed were unsanctioned by SIEDA first.

SPRINGFIELD CITY AREA TRANSIT SYSTEM
SPRINGFIELD, OHIO

Material received include:

lease agreement for vehicles and equipment.

Contract terms:

the lease agreement will be effective from July, 1989 until December 31, 1991.

Services listed:

fixed route service; 10 transit vehicles, 1 utility vehicle and a service pickup; small Section 9 funds.

CITY OF SPRINGFIELD, OHIO TRANSIT SYSTEM

Transit Services Provided

The City of Springfield, Ohio transit system (the City) receives Section 9 funds to operate a small, fixed route transit system. The City has made certain vehicles available for a public bus transportation system within the city and to points in the vicinity of the city. At the time of the lease agreement the City had 10 transit vehicles, 1 utility automobile and a service pickup. The Contractor is to provide public bus transportation service, vehicle maintenance and cleaning, and storage facilities for vehicles, equipment and parts. The system is funded by the City of Springfield and the Urban Mass Transportation Administration.

Contract Summary

Maintenance services to be provided. The contractor provides general maintenance services as set forth in the maintenance schedule, such as daily checks of fluid levels, checks every 3,000 miles for engine and transmission seals, and oil, lube and filter changes every 6,000 miles. The contractor must provide and maintain maintenance records and equipment and parts records for the Ohio Department of Transportation. The agreement may be amended if both parties are in agreement to the changes. Subcontracts are permitted if the subcontractor fulfills the same State and Federal regulations as the contractor.

Facilities and equipment requirements. The contractor must, at its own expense, provide complete, suitable and adequate storage for the vehicles and equipment leased to it by the City. Equipment to be stored includes a fare box safe, ten fare boxes, sixteen mobile radios and one repeater. The contractor is also responsible for shop tools, office equipment, spare parts and data processing equipment hardware and software (no specific equipment uses are listed in the agreement). The contractor furnishes all fuel, oil and other lubricants and fluids necessary for operating the fleet and is also responsible for cleaning the buses.

Service quality requirements. The contractor must maintain vehicles in good repair, mechanical condition and running order and provide complete, suitable and adequate servicing of vehicles. The contractor warrants all service operations be in complete compliance with Local and Federal laws. In addition to the specified maintenance schedule for all vehicles, the contractor should also follow specific manufacturer maintenance procedures as outlined in the manufacturer's manual. Upon contract termination the vehicles and equipment are to be returned to the City in the same condition as leased in, normal wear and tear accepted.

Pricing of services. The City leases the vehicles and equipment to the contractor for an annual fee of one dollar. Operating funds are provided by the City of Springfield and the Urban Mass Transportation Administration.

Insurance requirements. The contractor pays for comprehensive insurance coverage in the City's name. The policy is to include fire, theft, bodily injury, property damage and windstorm protection. Insurance coverage will be evaluated annually and must be approved by City representative. Absence of coverage may warrant termination of contract.

WARREN COUNTY TRANSIT AUTHORITY
WARREN, PENNSYLVANIA

Materials received include:
contract and invitation to bid.

Contract terms:
the contract shall be for a three year period beginning July 1, 1990 and terminating June 30, 1993.

Services listed:

fixed route service; vehicle fleet maintained of 5; receives Section 18 funds.

WARREN COUNTY TRANSPORTATION AUTHORITY

Transit Services Provided

The Warren County Transit Authority (the Authority) receives Section 18 funds and provides transportation service within Warren County. At the time of the last letting of their service contract, the Transportation Authority operated five vehicles on a fixed route basis to the general public. The Contractor provides a facility, preventive and major maintenance, and service and repair for the Authority's vehicles. Services are paid for monthly on a time and materials basis.

Contract Summary

Maintenance services to be provided. The contractor agrees to supply all necessary vehicle and equipment maintenance, body work, road calls, repairs, and labor. The contractor is responsible for pick up and delivery of all vehicles which are to receive service, as well as for keeping and maintaining personnel timesheets, vehicle maintenance logs, and invoices with the exception of liquid fuel tax rebate records. The Authority is responsible for removing fares from the fare boxes weekly, and for counting and depositing the fares. No computerized system of record keeping is required.

Facility and equipment requirements. The contractor, if requested, will store Authority supplied maintenance parts, tires, and lubricants at their facility to be used only on Authority vehicles. The Authority is responsible for purchasing the parts.

The contractor must have a facility located within a ten mile radius of the Authority's office in order to reduce both deadhead mileage and waiting time for replacement bus service.

Parts requirements. The Authority is responsible for purchasing all parts. The Authority may allow the Contractor to order parts and have the Authority billed. Minor parts under fifty dollars may be purchased from the Contractor by the Authority. No specifications for part(s) quality standards, types or purchase price are given.

Service quality requirements. The contractor is to maintain vehicles according to Federal and State standards for vehicle safety, and return them in the condition in which they were delivered, with reasonable wear and tear accepted. Prompt service is expected, which may require road calls and evening and weekend vehicle maintenance. The Authority retains the right to take a vehicle to another facility if the Contractor does not perform either minor or major work in a "timely fashion."

The contractor is required to follow preventive maintenance schedules specified by the Authority which are in line with the manufacturer's suggested preventive maintenance program as described in the 1980 GMC Medium and Heavy Duty Truck Maintenance Schedule, the 1985 Thomas Maintenance Schedule and the 1989 Chance Maintenance Schedule. Any work of this nature that is covered by warranty is not part of the contract.

The contractor must employ a mechanic who is a qualified diesel mechanic with a certificate of completion from a diesel manufacturer's school or equivalent diesel training and who has three years of experience as a diesel mechanic. Minor work such as a tire change must be directly supervised by a diesel mechanic if being done by a helper. A drug testing program is not in effect.

The Authority is responsible for the distribution of scheduling and routing information to Transit riders and for handling all correspondences with them.

Pricing of services. Essentially, costs are fixed, since there is no provision for cost reduction or escalation throughout the three year contract period. All bidders initially have the option, when formulating their bid, to vary their maintenance costs each year over the three year contract duration.

Information provided to Contractor to base bid. The bidding documents include the following elements and worksheets for prospective contractors: instructions to bidders; independent contractor status; diesel mechanic certification; Commonwealth nondiscrimination clause; non-collusion affidavit; disadvantaged business enterprises participation; and a bid proposal form. It is noted that all bid prices and any invoices are to be less Federal, State and Local tax unless otherwise specified. No past information is given on specifications for equipment, labor, or schedules.

Contractor selection criteria. The Authority will investigate the contractor to determine its ability to complete a project based on the criteria of responsibility, qualifications, and financial stability (no standards are given for the three criteria). The contract will be let based upon the lowest contract amount submitted for furnishing the service. The bid amount is derived by the Contractor's hourly rate for maintenance times a maximum of 1200 hours per year. The maintenance costs are broken each year into hourly wages, fringes, taxes and administrative costs. The total bid is derived by combining the total maintenance cost and expected profit over a three year duration.

Insurance requirements. The contractor must have umbrella liability insurance not less than 250,000 dollars for personal and property damage accounts. They must be protected from claims for damages because of injury, sickness, disease or death of any person other than employees and for property (includes Authority's vehicles).

Miscellaneous requirements. The selected service contractor must submit a performance bond or certified check in the amount of ten percent of the total bid amount to the Authority within ten days of being awarded a contract.

YORK COUNTY COMMUNITY ACTION CORPORATION
SANFORD, MAINE

Material received include:

bid specification.

Services listed:

fixed route, demand responsive services are provided; vehicle fleet is composed of 8 buses and 4 vans; Section 18 funds are received.

YORK COUNTY COMMUNITY ACTION CORPORATION

Transit Services Provided

The York County Community Action Corporation receives Section 18 funds and provides public service in York County. At the time of the bid specification, the Corporation operated 12 vehicles, 8 buses and 4 vans, and provided fixed route and demand responsive service. The Contractor provides preventive maintenance. Services are paid for on a time and materials basis.

Contract Summary

Maintenance services to be provided. The contractor is to provide preventive maintenance and repair. Record keeping responsibilities of the Contractor are to maintain and provide the Corporation with up-to-date maintenance logs on each vehicle.

Facilities and equipment requirements. The contractor facilities should have the capability to service vehicles that are 23 1/4 feet in length and 10 1/2 feet in height.

Service quality requirements. The contractor must complete jobs requiring less than 2 hours of work within one day and jobs requiring more than 2 hours work within three days. The contractor is responsible to have parts readily available so that work is not delayed. Delays will not be accepted due to unavailability of parts, unless they are not available in the Southern Maine/New Hampshire area -- no enforcement mechanism is specified. The contractor must guarantee all labor and materials -- no time period is specified.

Pricing of services. The contractor must provide the Authority with the cost of labor per hour, a list of jobs and prices and a total bid price (tune up, oil change and brake jobs included). The invitation to bid specifies that quoted labor prices will be fixed throughout the duration of the contract. The quoted parts prices may vary, but any discounted percentages will be fixed throughout the contract. The Contractor must provide the Corporation with job estimates prior to beginning tasks.

Information provided to contractor to base bid. The contractor is provided equipment specifications on which to base bid, and worksheets to provide the following bidding information: number of full-time mechanics, hourly labor costs, number and dimensions of bays and pits, availability of parts discount and towing, and general preventive maintenance items such as belts, hoses, filter and pvc, and a list of jobs such as oil change, tune up, and brakes repairs.

Contractor selection criteria. The contractor selection is based on the total bid price. The total bid price is the combined costs of parts and labor for tune up, oil change and brake job services. Other relevant criteria to Contractor selection include the ability of bidder to meet service requirements, the completeness of information used to develop bid and the quality of the three references that are required from the Contractor's current commercial or private accounts.

References

1. Bajpai, J.N., "Economic Evaluation of Bus Maintenance Contracting," Transportation Research Record 1164, (1988), pp. 46-54.

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3. Memorandum from Jim Ford, Interim County Administrator, Subject: "Approve Ryder/ATE Contract for SCAT Vehicle Maintenance Services," November 20, 1987.

4. Space Coast Area Transit, "Request For Proposals for the Provision of Vehicle Fleet Maintenance and Repair Management Services," Brevard County Board of County Commissioners, August 28, 1987. p. 4.

5. Space Coast Area Transit, "Request For Proposals for the Provision of Vehicle Fleet Maintenance and Repair Management Services," p. 3.

6. Space Coast Area Transit, "Request For Proposals for the Provision of Vehicle Fleet Maintenance and Repair Management Services," p. 4.

APPENDIX C
HANDLING PROPERTIES AND WORKPLACE HAZARDS OF POPULAR ALTERNATIVE FUELS

The transit industry has been placed in a lead position in the demonstration of and experimentation with alternative fuels in fleet use. Although the demonstration of alternative fuels has primarily been in large urban fleets, small urban, rural, and specialized transit system fleet are likely to also be used as test beds for alternative fuel demonstration and use. The Clean Air Act Amendment of 1990 sets requirements for fleets in air quality non-attainment areas for fleets of ten or more vehicles which require the use of "Clean Fuels" and encourages the use of alternative fuels. Some states and local governments have adopted more stringent requirements, mandating alternative fuels in public fleets, with several jurisdictions considering similar legislation. For example, six states currently require the procurement of alternative fueled vehicles by state agencies.[1]

Using public fleets, and especially transit fleets, to promote the use of alternative fuels is a popular public policy and it is gaining in support. There are several reasons for the promotion of alternative fuels and for promotion of alternative fuel use through public fleets.

Promotion of alternative fuel use

The prices of petroleum products have reached an all time low and there seems to be little reason to believe the supply of non-renewable petroleum based hydrocarbons will be consumed within at least the next several generations. For example, the retail price of a gallon of gasoline was at about 1.25 dollars in 1978 (in 1990 dollars), rose to a 1.90 dollars in 1982, and has declined to about one dollar in 1992.[2] The world demand for petroleum of is about 22 billion barrels per year[3] and over 900 billion barrels of conventional oil reserves are still remaining.[4] Known petroleum in tar sands and oil shale include another 5,000 billion barrels.[5] Given that petroleum is inexpensive and plentiful, what then are the reasons for the use of public fleets as alternative fueled vehicle test beds?

There are three primary reasons why the promotion of alternative fuels should be a social objective and promoted through public policy. They are to:

- Reduce the volume of local air pollution originating from mobile sources. Local air pollution, in the form of carbon monoxide, nitrogen oxides, volatile organic compounds and other harmful emissions, is created by motor vehicles. For example, motor vehicle contribute 45 percent of the hydrocarbon emissions and 85 percent of the carbon monoxide emissions in a typical urban area.[6] There is still much debate over the magnitude of the benefits of some alternative fuels in reducing harmful emissions and some argue that particular alternative fuels may even be inferior to reformulated gasoline.

- Reduce the amount of green house gases originating from mobile sources. Between 25 to 40 percent of the carbon dioxide equivalent greenhouse gasses originated from mobile sources. Alcohol fuels from biomass are estimated to reduce motor vehicle related greenhouse gas emissions by 70 percent in comparison to conventional fuels. Electricity will also reduce greenhouse gas emissions by roughly 25 percent, if the electricity is derived from conventional sources, and by 100 percent if electricity is derived from solar energy.[7]

- Reduce the imbalance of trade payments with major oil exporting countries. Roughly 40 percent of the United States trade deficit is related to oil imports.[8] Clearly, petroleum imports have a significant impact on the United States' balance of payments.

Promotion of alternative fuels through public fleets

All three of the above reasons for promotion of alternative fuels represent social or national interests in the reduction of petroleum consumption. Presently, the cost of operating motor vehicles using petroleum motor fuels is generally less expensive than alternative fuels. Therefore, as long as the cost to own and operate an alternatively fueled vehicle is greater than a conventional fueled vehicle, individuals and firms cannot be expected to assume the added costs of experimentation with alternative fuels. The promotion of alternative fuels is a social objective and hence it is an appropriate public policy to foster alternative fuel use through public fleets.

In addition to having the added responsibility of promoting social objectives, public agencies with large fleets have much more leverage over which vehicles are introduced into the market place. There is a great deal of cost lumpiness in changes to the manufacturing of motor vehicles and changes in the supply of motor fuel. This is due to the high level of fixed costs associated with the manufacturing and distribution of new products. Specifically, transportation equipment must be made in great numbers to bring down the average cost of the vehicle plants, processing, and vehicle distribution systems. On the fuel supply side, there is lumpiness in the cost of manufacturing fuel, the provision of fueling systems, and in the creation of fuel distribution systems. After all, the petroleum industry has had the last 100 years to build up to a distribution system that delivers 110 billion gallons of gasoline and 20 billion gallons of diesel fuel per year.[9]

The fixed costs of ramping up to production quantities for engines and the building of a network for fuel delivering are likely to be significant costs associated with the establishment of an alternatively fueled vehicle industry. Many of the start-up costs can be more easily absorbed by public agencies, who can use their market leverage through fleet purchases of alternatively fueled vehicles.

Work Place Hazards of Alternative Fuels

All fuels, including gasoline and diesel fuel, present significant work place hazards. Workers have had lifetime experience with gasoline and diesel fuel (conventional fuels) and are familiar with their properties and handling hazards. In addition, the automotive industry and petroleum manufactures/suppliers have had roughly 100 years to develop safe procedures and equipment for handling conventional fuels. Alternative fuels do not necessarily present more significant workplace hazards than conventional fuels, but the hazards are different than those of conventional fuels and are unfamiliar to workers. Thus workers require appropriate training and safety measures.

Transit agencies that conduct their own maintenance have a responsibility to their work force to provide them with the necessary training on alternative fuel handling, and provide facilities and maintenance equipment that are designed for alternative fueled vehicles. As described in the following portions of this document, the facilities and maintenance equipment requirements to perform maintenance safely may be very different than those necessary for conventional fuels. Transit agencies that contract for maintenance must make sure that the maintenance contractor is qualified to work on alternatively fueled vehicles. The transit agency can not absolve its liability for worker safety through a contract and must take reasonable actions to make sure that the contractor is adequately prepared to safely work on alternative fuel vehicles. Thus it is important to understand the modifications to maintenance operations necessary to safely handle alternative fuels, even for an agency that chooses to contract for comprehensive maintenance services.

This appendix provides information on work place hazards and actions to mitigate work place hazards of maintaining alternatively fueled vehicles. Although there are several alternative fuels, covered in this appendix are the most popular alternative fuels; the alcohol fuels, methanol and ethanol, and the two primary gaseous fuels, compressed natural gas and liquified petroleum gas. Other alternative fuels, such as electricity and hydrogen, are currently being demonstrated but their use is less widespread.

Workplace training issues

Effective training programs are essential to the success of an alternative fuel bus program. The content of the training should include all aspects of any alternative fuel in use. This includes a general description of the fuel, examples of its uses, both in engine applications and elsewhere, and its toxicity and hazards. Relating a few case studies on toxic ingestion, skin absorption, fire hazards, and explosion risk may be helpful. These issues are covered elsewhere in this appendix and they vary greatly with fuel type.

A special attempt should be made to elicit myths and stereotypes about various fuels from the maintenance and refueling staff. Then, discuss these ideas in light of current findings and known fuel characteristics. In addition to these basics, fuel-specific training issues, there are some other more generalized training matters which are important, but not generally seen as part of a maintenance worker's or refueling attendant's duties. These include fire fighting techniques, the use of protective clothing and equipment, the monitoring and proper control of ventilation, policing the shop for combustibles, and expanded record-keeping practices.

It may be difficult to teach patience. However, many alternative fuel pumping devices will take a little longer to fill up a vehicle than diesel or gasoline. For the gaseous fuels, fast-fill equipment may help reduce fueling time. In the case of methanol, refueling takes longer because it has less energy content per unit volume than diesel fuel. The crew should expect a different pace of work.

Some transit authorities, such as the City of New York, issue "Certificates of Fitness" to their employees who are trained and authorized to handle hazardous alternative fuels. The certificate is earned through successful completion of a practical training program. This concept ensures an emphasis on learning and safety awareness on the job.

An appropriate training plan for maintenance shop employees would include written materials, oral presentation, and small group discussions which address the topics listed below.

ELEMENTS OF A TRAINING PLAN

1. Introduce properties of the fuel and its engine
    A. Flammability/Luminosity/Combustion/Explosion
    B. Typical ignition sources & Fire suppression devices
    C. Toxicity: Skin, Eyes, Ingestion, Inhalation
    D. Vapors & Ventilation requirements
    E. Incompatible materials
    F. Electrical wiring safety requirements

2. New Equipment Operations (pumps, nozzles)
3. Policy on securing all combustibles in the shop
4. Fire fighting techniques specific to this fuel
5. Need to establish and monitor proper shop ventilation
6. Required protective clothing and equipment
7. Fuel inventory, mileage, and maintenance record-keeping
8. Technical differences in driving and maintenance
9. Changes in facility design if required

Topics 4, 6, 7, and 8 are general to all fuels and are discussed below. The remaining topics are specific to each fuel and are covered in each fuel's section of the appendix.

Fire fighting techniques (topic 4)

With alternative fuels, first-response fire fighting and first aid procedures will be very different from what maintenance shop employees and drivers have known. Fire spread rates, flash-backs, vapor concentrations, low flame luminosity, miscibility with water, toxicity levels, and the inability to detect the presence of non-odorized smoke all make fire fighting a "new ballgame". Further-more, with fire and explosion hazards increased due to the installation of pressurized tanks, high voltage electrical systems, new types of non-smoke fire alarms, specific first-response fire fighting training for transit workers is recommended.

All transit employees working in a building where alternative fuels are present, or where workers are occasionally present in the building, such as drivers and office personnel, should receive the fire fighting training. The content of that training may be drawn from the "Fire and Explosion" sections which follow.

Protective Clothing and Equipment (topic 6)

For methanol, chemical safety goggles and impervious rubber or neoprene gloves should be required. In areas of unusual exposure, use impervious boots, and an apron or coveralls as well. It is necessary to provide an eye wash fountain and a quick-drench facility in the work area. Mechanics and those fueling methanol engines should have at least one change of clothes available at the place of work. If their clothes become wet with methanol, they should be changed immediately. Special care must be taken with boots, shoes, and gloves which may retain harmful methanol on the inside.

Marked, closed containers should be available for the disposal of methanol-contaminated clothing and rags. For ethanol, special gloves are not required if there is no skin contact, but safety eyewear with splash guards is recommended. For those handling compressed gas, insulated (neoprene) gloves are necessary to prevent freeze/burns. Spark-proof tools should be employed, as per the fuels sections that follow.

Record-Keeping Practices (topic 7)

Training programs should include a section on record-keeping to track combustible waste. This waste may be separated into different groups, such as paper and rags, grease, waste oil, old tires, and so on. Written or computer records should be kept for a two-step process necessary to dispose of each group of combustible waste. Step one is the removal of the waste from the garage and building area, step two is the removal of the waste from the transit property. Maximum waste retention schedules should be established, and a daily review of waste removal activities should be made.

Another record-keeping system which may not be new in the trucking and transit industries, but which takes on increased significance, is the maintenance of fuel inventory records. The organization is now handling an additional fuel, in larger quantities (per unit of energy content) with greater risks involved should the inventory system be faulty. A back-up parallel inventory system (manual/automated) is recommended.

Since methanol exhibits significant toxicity, it is very critical to discover and address any leakage or spill. LPG and CNG have an explosion risk, and so again detection of leaks is of paramount importance. With exceptionally accurate inventory control, many of these problems may be minimized.

Training for motor vehicle drivers (topic 8)

All of the alternative fuels discussed herein are considered hazardous materials by the U. S. Department of Transportation for the purpose of shipments. Interestingly enough, "HazMat" regulations do not apply to vehicles carrying under threshold quantities (1,000 pounds or more) in their fuel tanks. The regulations only apply when the hazardous materials have been tendered over as freight. However, organizations wishing to devise training programs, fuel unloading plans, and accident response procedures may find some guidance in the "HazMat" regulations.

Drivers of motor vehicles which carry hazardous materials are subject to a few state-level regulations, and to stringent federal-level training requirements. The Hazardous Materials Transportation Act sets out general requirements for incident reports and shipping documents.

Training for carriers of flammable cryogenic liquids in a cargo tank are covered under 49 CFR 177. 816. Motor carrier instructions for safety compliance in accord with DOT regulations may be found at 49 CFR Parts 390-397. There are also training requirements for loading and unloading of specific classes of hazardous materials, in 49 CFR 177.834-177.844. The law also mandates accident response procedures, at 49 CFR 177. 855-177. 861. [10]

Although most of these regulations apply to semi-truck and straight truck drivers, they are important for transit operators to understand. These regulations offer what seem to be the only transportation-related guidelines for handling some of the alternative fuels. Furthermore, these rules and regulations could become a model for legislation and regulations in the transit industry.

Methanol

Methanol, an alcohol fuel, is also known as methyl alcohol, wood alcohol, or carbinol. An oxygenated hydrocarbon, its molecular formula is CH_3OH. It is a clear, colorless liquid, with its own characteristic odor. It is derived from gassification of coal, or from natural gas, or wood-based refuse and other bio-mass sources. Most methanol is derived from conversion of national gas. By volume, methanol has about 43 percent of the energy content of a gallon of diesel fuel. Methanol that is 100 percent pure is described as "neat".

It should be noted that methane, a naturally occurring gas, sometimes known as "swamp gas," is formed by bacterial action on organic matter. It is not the same as methanol. The chemical symbol for methane is CH_4.

Hazards with methanol

Fire hazard - flammability - combustion. Methanol is considered a dangerous fire hazard when exposed to sparks, heat, or flames. Ignition sources for methanol include sparks from shop equipment, or even sparks from static electricity. However, methanol is much less likely to ignite in open air situation, compared to gasoline. In well-ventilated areas, or open air situations, the low volatility of methanol makes it more likely that a lower incidence of transportation-related fires will result.[11]

Appropriate fire extinguishers include water spray, with water-fog type nozzle. ABC-rated dry-chemical extinguisher and alcohol-resistant foam (ARF), or carbon dioxide (CO_2) are effective against methanol fires. Methanol has a wide range of air-to-fuel ratios within which it can ignite.

The flash point of a flammable liquid is the lowest temperature at which sufficient vapors may form above a pool of that liquid to permit its ignition. With methanol, the flash point is 52° F. Therefore, the flammability of outdoor methanol spills in cold winter climates will be somewhat limited. However, this does not render methanol any less toxic for human contact.

Methanol burns with low flame luminosity, difficult (at night) or impossible (in daylight) to see, or even to estimate the size of the fire. This led to the M85 blend, which is 85 percent methanol and 15 percent high volatility gasoline. With M85, the flame is visible in broad daylight. Fire is considered a major hazard associated with methanol, and rigid precautions against fire and explosion must be enforced in and around methanol facilities. Required warning signs are "Flammable" - "No Smoking" - "No Open Flame".

When methanol is heated to decomposition, potentially harmful carbon-oxides may form. Carbon monoxide (CO) and carbon dioxide (CO_2) are potentially fatal asphyxiants. Also, in methanol fires, as well as in methanol exhaust, aldehydes are formed, including formaldehyde. It is an irritant, and considered potentially toxic and a cancer-causing agent in certain circumstances.

Work rags and contaminated absorptive material may present a fire hazard, and should be placed in well marked closed containers for RCRA-approved disposal.

A prime fire hazard of methanol-fueled vehicle is a ruptured fuel tank as the result of a collision. Therefore, transit operators may want to consider carrying a supply of vermiculite or other absorptive material, as well as an on-board fire extinguisher, in case such a spill occurs.

Explosion hazard. Methanol is considered to be a moderate explosion hazard. A mixture of methanol fuel vapor and air will auto-ignite at 725° F. Sources report that liquid methanol will ignite if exposed to hot surfaces, such as hot engine exhaust manifolds and components exceeding 430° F.[12]

The threat of explosion and fire in methanol fuel tanks is more significant than with other fuels. In a "closed air" situation, gasoline vapors are considered too rich to burn, while diesel fuel vapors are considered too lean to burn. The methanol fuel/air mixture in "closed air" tanks is within its ignition limits. To explode, the mixture must first be exposed to an ignition source. So, methanol in a closed tank should be considered a dangerous explosion hazard.[13]

Fuel tank explosion of methanol vapor/air mixtures is possible with air temperatures between 7° C. and 45° C. This means that during winter months in some parts of the United States, fuel tank ignition is highly unlikely.[14] The appropriate warning sign should be "Explosive".

Skin contact. Methanol is a defatting agent, and as such, skin may become cracked and dry. Skin absorption can happen, and symptoms will be similar to those of inhalation. The fuel is especially harmful to the mucous membranes. In cases of dermal contact through the clothing, remove the contaminated clothing immediately, wash skin with soap and flush with water for 15 minutes. Appropriate warning signs would include: "Causes Skin Irritation" or "Causes Severe Skin Irritation".[15]

Methanol is absorbed into the skin readily, at a rate of about 0. 2 mg/cm^2 per minute. For example, immersion of one's hand in methanol for four hours would permit sufficient absorption to cause death.[16]

Eye contact. Methanol is an eye irritant, and continued exposure may cause eye lesions. If eyes are exposed, immediately flush with water for 15 minutes, lifting upper and lower eyelids from time to time. Contact lenses should not be worn when working with methanol. Appropriate warning sign: "May Cause Blindness".

Inhalation. Vapors from methanol are toxic. If a person can smell methanol, they have been probably been exposed to unhealthy levels of methanol. However, a brief whiff is not considered harmful. If inhaled, remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. The OSHA airborne limit is 200 ppm. Appropriate sign: "Harmful if Inhaled".

Inhalation of methanol exhaust vapors may be dangerous. A by-product of methanol combustion is formaldehyde, which can cause a burning sensation in the eyes, nose, and throat. However, a person may smell sharp formaldehyde odors well below harmful levels. Workers should avoid the area of exhaust if a formaldehyde smell is present.

Ingestion. Clinical research to date has provided little information on methanol toxicity resulting from chronic (low level) exposure, of the kind that would likely occur in a transportation maintenance garage or fueling station. But there are some standards for chronic exposure to methanol. Both the American Council of Governmental Industrial Hygienists (in 1985) and the National Institute for Occupational Safety and Health (in 1976) have established ambient air concentration threshold values for methanol vapor.[17]

The research on acute exposure to methanol is more complete, with toxicity from larger doses of methanol taken over a short period of time following a well-known pattern. This symptomatic pattern includes nausea, headaches and an initial mild depression of the central nervous system. Then follows an asymptomatic period of several hours to several days. The latent period then gives way to physical symptoms of metabolic acidosis and visual impairment or blindness. In severe cases, coma and death may follow.[18]

Methanol, as a liquid, is toxic. If ingested or accidentally swallowed, induce vomiting immediately. Never give anything by mouth to an unconscious person. Small amounts can intoxicate and cause blindness. Usual fatal dose: three to four teaspoonfuls. Some estimates state that ingestion of one ounce may cause blindness, two or more ounces can cause death. However, methanol poisoning is treatable if prompt medical attention is given. Local phone number(s) for paramedics or 911-type emergency medical services should be posted in methanol storage, fueling and maintenance areas, near a telephone.

First-aid for a methanol ingestion victim may be given by those who are trained and authorized to administer first aid. Emergency personnel should be contacted, then have the person lie down and keep warm, keep their eyes shaded from light, and if the victim is conscious, induce vomiting.

Due to the extreme toxicity of methanol, do not store, handle or consume food and drinks in any area or room where even minute amounts of methanol may be present. Necessary warning signs: "May be fatal if swallowed", "Poison".

Disease risks. Long-term low-level exposure to methanol is not considered to pose chronic health or disease indications. Methanol occurs naturally in the body, at a level of about 0.5mg/kg of body weight. Methanol is also present in the daily diet of fruits, vegetables, alcoholic beverages, and in aspartame, the diet soft drink sweetener.[19]

Chronic exposure to methanol may result in, or aggravate, skin irritations, impairment of vision, impairment of kidney function, and enlargement of the liver. Persons with pre-existing skin or eye disorders, or impaired liver or kidney function may be at greater risk of methanol exposure. Exhaust from methanol engines contains formaldehyde, which is considered a carcinogen in certain circumstances. However, there are currently no EPA standards for formaldehyde.[20]

There may be reproductive and developmental effects of exposure to methanol at substantially elevated concentration levels. In this way, it is believed to be similar to ethanol.

Symptoms of over-exposure. The toxic effects of methanol are exerted primarily on the nervous system, especially the optic nerve. Once absorbed into the body, it is very slowly eliminated. Symptoms of over-exposure may include drowsiness, headache, nausea, vomiting, blurred vision, and blindness. Over-exposure to methanol may also result in coma and death. Sometimes, a person may get better, and then markedly worse, up to thirty hours later.

If exposed to an unusual amount of methanol, a person must avoid any contact with methanol for the next two or three days, to allow the body to eliminate the methanol. Depending on the circumstances, it may not be wise to have this person return to work during this period.

Leaks, spills, disposal. Ventilate area of spill or leak. Remove all sources of ignition. Clean-up personnel require protective clothing and respiratory protection from vapors. Recover and contain the liquid fuel if possible. Methanol may be absorbed with vermiculite, dry sand, or earth, for disposal as a hazardous waste in an RCRA-approved facility. Do not flush to sewer.

Methanol is miscible with water, and leaks from storage tanks may disperse into and contaminate groundwater. Even in mixtures of one part methanol to five parts water, the combination will still be flammable.[21] However, methanol concentrations capable of causing toxic effects in an adult (roughly 13,000 ppm. in drinking water) are not expected under any credible scenario.[22]

Leaks into open bodies of water will disperse rapidly, and elimination from the environment will occur as a result of methanol's rapid natural biodegradation in water.

Leaks and spills on land are very toxic to plant and animal life. But its effects are much shorter-lived than petroleum spills, due to methanol's complete and rapid evaporation rate. As long as groundwater is unaffected, nothing is usually done to clean up small methanol spills.[23]

Methanol vapor is "heavier than air," with a density of 1. 1 times that of air. This means methanol will settle in low lying areas, such as maintenance pits.

Facility design issues for methanol

Storage tanks. Methanol is corrosive to metallic aluminum, other metals, and to rubber and plastic. Therefore, tanks and piping should be constructed accordingly.

Protection against physical damage, as well as vehicle collision barriers are necessary. Outside or detached storage is preferable. Some experts recommend buried storage tanks. All storage and use areas should be "No Smoking" areas.

Alcohols are often stored in tanks with floating covers, or with inert atmospheres, which address the problem of surface accumulation of vapors. Vapor recovery systems are a necessity. Storage tanks and vehicle tanks need to be completely constructed of stainless steel or other like material.[24]

Dispensing and transfer equipment. All dispensing and transfer areas should be "No Smoking" areas. Spark-proof tools and explosion-proof equipment should be used in storage and transfer areas.

Shop areas and refueling stations must have eye wash facilities and safety showers.[25] It may be necessary to have a rest room or dressing room for workers handling methanol, to ensure that contaminated clothing does not go home with the crew.

Specially-designed, dedicated floor drainage systems are necessary to prevent spilled methanol from being discharged into the environment. Some operators have been unable to devise such a system. Traditional oil separators cannot be used, since methanol is miscible with water.

Ventilation systems. A local and/or general exhaust system is necessary to keep employee exposures below the Airborne Exposure Limit, 200 ppm. Control of emissions of methanol at its source is recommended through use of strong local exhaust system, thereby preventing dispersion into the general work area.

The highest concentrations of formaldehyde in methanol exhaust have been found during the first eight minutes after a starting the bus. This occurs because the catalyst in the catalytic converter has not warmed up and become fully effective. It is therefore essential to cold-start the methanol engine outdoors, or in a very well ventilated area.[26]

It is especially important to use only well-vented maintenance pits for methanol coaches. An exhaust fan should be present and operating when opening a fuel system.

Electrical systems. Electrical wiring, lighting and all devices within the bus fueling area and maintenance pits should be converted to Class 1, Division 1, explosion proof/vapor proof construction. Electrical breaker switch(es) in the shop should be clearly marked and easily accessible to shop personnel in the event of a fire. Fire protection systems such as sprinklers, fire alarms, and smoke venting, must be suitable for hazardous duty.

Ignition Sources. In fire situations, methanol vapors may flow along surfaces to distant ignition sources, and flash back. Lit cigarettes are considered the most likely ignition source for methanol. Spark-proof tools and explosion-proof equipment should be used in maintenance shop areas where methanol is present. Grinding, welding, or cutting tools should not be allowed in the garage.[27]

Enclosed spaces present greater danger of ignition, since methanol vapors are within a wide range of ignition limits when exposed to air. Potential ignition sources include malfunctioning electrical in-tank fuel pumps and fuel level sending units. Also, friction sparks during tank puncture and static electricity present potential, but quite unlikely, ignition sources.[28] Recent findings have shown that a design configuration which includes submersible pump(s) for methanol transit fueling is not appropriate, due to the explosion risk. Therefore, maintenance facility space should be allocated for a traditional stand-alone pumping system.[29]

Facilities must be designed so that a clear and physical separation of methanol areas and non-methanol areas exists. There must be no welding or cutting tools operated in the methanol area, no tools which generate sparks, such as a grinding wheel, and no electrical equipment which is not approved for use near flammable liquids.

In the case of a collision, or stopping alongside the road for any reason, roadside flares must not be present or used with methanol-fueled coaches. The sparks created are very dangerous. Drivers should also be ready to prevent passengers and on-lookers from smoking, as this is such a common ignition source.

Care should be taken in design that no railway is within 250 feet of methanol-related facilities, as the rolling stock and undercarriage is often a source of friction and sparks.

Incompatibilities. Methanol is incompatible with strong oxidizing agents such as nitrates, perchlorates, or sulfuric acid. It should be kept in separate physical facilities. Glass-lined or stainless steel vessels may be used to hold methanol.

A solvent, it may attack some kinds of plastic, rubber, and coatings. It may react with or corrode aluminum metals, generating hydrogen gas. Methanol will deteriorate steel-aluminum nozzles. Methanol may attack terneplate linings of fuel tanks, aluminum or zinc fuel pump and carburetor castings, and fuel line and fuel pump elastomers.[30]

Ethanol

Ethanol, an alcohol fuel, may also be known as ethyl alcohol, grain alcohol, or just alcohol. An oxygenated hydrocarbon, its molecular formula is C_2H_5OH. It is water clear, and has a neutral odor. Appearance and odor could be modified by non-hazardous components added to the fuel. It is produced through the fermentation of simple sugars, or through other chemical and catalytic reactions. However, the great majority of fuel ethanol in current use is fermentation ethanol.[31] By volume, ethanol has only about 58 percent of the BTU energy of diesel fuel.

Ethanol (ethyl alcohol) is the intoxicant found in alcoholic beverages, and as such, its production, use, and distribution are nominally regulated by the United States Bureau of Alcohol, Tobacco, and Firearms. Ethanol is legally measured in proof gallons, where 100 percent pure ethanol is considered 200 proof.

Currently, ethanol is most commonly found as a component of gasohol, a gasoline mixture including about 10 percent pure ethanol. Gasohol is sold in 42 states, accounting for about 9 percent of the total gasoline market, about 9.5 billion gallons annually.[32]

Hazards with methanol

Fire - flammability - combustion. Fire fighting is best accomplished by using alcohol foam, CO_2, or dry-chemical extinguishers. Do not use water, unless in deluge quantity. Required warning signs: "Flammable" and "No Smoking". Mixtures of 50 percent ethanol and 50 percent water will still burn.

Explosion. The explosion hazard of ethanol is rated as moderate when exposed to flame. Although ethanol is less volatile than gasoline, it is considered to be more explosive. The vapors above stored gasoline form a mixture with air which is too rich to burn. This is not the case with ethanol, whose vapors are potentially explosive. Therefore, it must be stored in properly vented containers.[33] Explosion risk may also be minimized by keeping ethanol storage tanks cool. An appropriate warning sign: "Explosive" is necessary.

Skin and eye contact. Repeated over-exposure to ethanol will cause redness and irritation of the skin. Flood skin with water if exposed to ethanol. Ethanol is not considered to be hazardous to the skin. If in the eye, immediately irrigate with water.

Inhalation. Small amounts of ethanol vapors are not considered toxic. However, if symptoms are present or exposure exceeds 1,000 ppm., use a NIOSH-approved respirator to assist the victim.

Excessive ingestion. Gastric lavage, followed by saline catharsis, is recommended, then get medical care for the victim. Neat ethanol is an intoxicating beverage. However, most fuel ethanol has been denatured, and therefore, is toxic.

Disease risks and symptoms of over-exposure. Ethanol is not listed as a carcinogen by OSHA or the National Toxicology Program. Acute over-exposure to ethanol will be marked by irritation of the eyes, nose, and throat, or headache. Chronic over-exposure to ethanol will be marked by drowsiness and lassitude, loss of appetite, and inability to concentrate. These symptoms would be commonly known as drunkenness, or alcohol poisoning in acute cases.

Leaks, spills, disposal. Small amounts may be flushed with water, large amounts may be contained and collected for incineration.

Facility design issues for ethanol

Storage tanks, dispensing and transfer equipment. Precautions with ethanol are much the same as those with gasoline. All storage tanks and fill nozzles should be grounded, and kept closed at all times. All containers must be non-combustible. If above-ground, they should be locked and fenced-off to guard against pilfering. Ground all containers when emptying. Due to its potentially explosive vapors, ethanol must be stored in properly ventilated containers.

Ventilation and electrical systems. Requirements parallel those for gasoline. With ethanol, local exhaust systems should be sufficient to keep vapor concentration below 1,000 ppm.

Fire extinguishers for both electrical fires (Class C) and chemical fires (Class B) should be placed in conspicuous, readily accessible locations. Such areas should be well-lighted, and kept clear of obstacles.

Ignition sources. Ethanol should be kept well away from heating devices, all electric devices, or other ignition sources. Walls, partitions, and cabinets near ethanol facilities should be constructed of non-flammable materials, such as steel or slate.

It is important to maintain a written daily schedule for the collection and disposal of all combustible waste. Also, maintenance managers may want to consider dust collection systems, due to the combustion and explosion potential of dust. And vehicle lubricants, a potential ignition source, should be stored in self-closing metal containers. Ethanol vapors will auto-ignite at 793° F.

Incompatibilities. Proximity to oxidizing agents, such as acetyl chloride, nitric acid, and hydrogen peroxide should be avoided.

Compressed Natural Gas (CNG)

CNG is a gaseous fuel. When used as a fuel, to increase the amount of energy available, the gas is highly compressed, to 2,400 - 3,000 psi. This accounts for the necessity of strong but heavy on-board steel or aluminum tanks. Natural gas has a very low energy density, and is carried in a highly compressed state at 2500 to 3000 psi, about ten times as compressed as LP-gas.

Hazards of Compressed Natural Gas

Fire - combustion - explosion. CNG vehicles are believed to be safer due to the structural integrity of the engine's fuel storage and supply systems. Compressed natural gas is more difficult to auto-ignite than gasoline, at a temperature (1,200° F. to 1,300° F.) about twice as high as that for gasoline. It will ignite only in a limited gas-to-oxygen mixture range of 5 to 15 percent.[34]

There is a moderate explosion risk with CNG, and care should be taken to isolate and eliminate any potential ignition sources.

Toxicity. CNG has not shown any known toxicity. In well-ventilated areas, inhalation risk to humans is negligible.

Leaks, spills, disposal. CNG is lighter than air, and any leaks will disperse upward. This makes proper ceiling ventilation essential in the maintenance shop. Most refueling activities are still performed outdoors for fire and explosion safety reasons, as any leaks will disperse upwards.

Facility design issues for CNG

Storage, dispensing, transfer, ventilation. According to the National Fire Protection Association (NFPA) standards, gas compressors, dispensing equipment, and storage containers may be located either inside or outside of buildings. For inside installations, the following NFPA requirements apply.

> The building must be used solely for this purpose and constructed of non-combustible or limited-combustible material. Or, the equipment must be located in a dedicated room within a building which is used for other purposes. This room must be built of non-combustible or limited-combustible material, have at least one wall adjacent to the outdoors, and have direct (doorway) access to the outdoors.[35]

Also, the CNG facility must have an independent mechanical ventilation system, gas detection system, and explosion venting system. For installations of fast-fill 600-hp compressors, the noise level will be significant, and soundproofing, as well as 1,320-volt electrical service will be necessary. In some locales, significant utility company improvements may be necessary to increase the (underground) gas pipeline capacity.[36]

The maximum total volume of CNG permitted on-site at a refueling station is 10,000 cubic feet. CNG equipment which is located outdoors must maintain adequate clearance requirements from buildings, lot lines, and combustible material or waste.[37]

Electrical systems. For CNG fast-fill service, the electrical distribution system may require upgraded to 1,320-volt service to power the compressors. Also, fueling and maintenance areas with potential for gas liberation should be converted to Class 1, Division 1 construction.

Structural notes. CNG refueling activity currently takes place outdoors. It is unclear whether insurance underwriters, fire officials, and building code departments will allow indoor fueling of CNG equipment. In the case of indoor maintenance or refueling facilities, the separate-building concept used with methanol would also be necessary for CNG. Additionally, specially-constructed blow out panels are recommended to provide relief in the event of an explosion. Fire protection systems must be installed with densities and flow rates adequate for high-hazard uses.[38]

Liquified Petroleum Gas (LPG)

These gasses include propane gas, butane gas, and mixtures of the two. Liquid petroleum gasses can be extracted from oil fields, or are derived as a by-product of the petroleum refining process, specifically in refining and cleaning up natural gas. On a per gallon basis propane offers between 71 percent - 83 percent of the energy content of diesel fuel. At normal atmospheric conditions, LPG is gaseous, but when compressed or refrigerated, it may become a liquid. It is then reconverted to a vapor for burning in the engine.

LP-gas has been used as an internal combustion fuel since the mid-1920's. National standards for containers and pertinent equipment were first published in 1940 and have been continuously updated.[39]

Technical regulations and recommendations for the safe use of LP-gas have been well developed over time. A discussion of standards for containers, installations, valves, cylinders, vaporizers, and piping, among other items, may be found in LP-gas Engine Fuels.[40]

Hazards with Liquefied Petroleum Gas

Fire hazard - combustion - explosion. There is a combustion hazard with the use of LP-gas. This can be minimized by eliminating ignition sources, and by performing refueling and maintenance activities outdoors where possible. Direct heat applied to storage or vehicle fuel tanks is dangerous as the temperature changes may cause pressure changes inside the tanks, with a real potential of explosion.

Many organizations which handle propane utilize portable explosion meters which detect unacceptable levels of ambient propane. Many fire departments have not invested in explosion meters, therefore it is recommended that transit agencies which are heavily involved with propane fuel purchase their own meter.

In gaseous form, propane is heavier than air, so it will tend to settle in trenches or maintenance pits, exacerbating the explosion hazard there.

Most propane tanks are designed to be filled to about 85 percent of capacity, for safety reasons. As long as the sealed pumping system is operating without any leaks, the risk of explosion is quite low.

Skin and eye contact. Propane boils at -44° F. There is a burn risk when opening valves to bleed excess propane into the air which may remain in the line after refueling or fuel transfer. The amount remaining in the line is typically about one tablespoon. So, heavy insulated gloves are necessary for those persons engaged in fuel transfer activities.

Inhalation and ingestion. Small amounts of propane leaked into the air will disperse. However, it is recommended that all maintenance areas be well-ventilated. Fueling activities are best performed outdoors. Propane has not shown any known toxicity.

Leaks, spills, disposal. Propane is heavier than air, and can be hazardous if leaked and accumulated in enclosed spaces. Small amounts of propane may be allowed to disperse into well-ventilated air spaces.

Ignition sources. The combustion hazard of LP-gas may be minimized by addressing all ignition sources. Smoking must not be allowed in maintenance areas or within fifty feet of refueling areas. Experts recommend that all LP-gas activities take place in a fenced-in area, with gates at either end. There should be no combustible litter or paper within ten feet of the pumping station. Design care should be taken so that no motor vehicles or trains operate within fifty feet of the pumping installation. Be especially cautious of the down-wind area, as LP-gas may be carried through the air to potential ignition sources.

A common ignition source for propane is open flame, or pilot lights on heating units. Facility design changes to eliminate these sources should be accomplished before propane-related activities take place. Furthermore, there must be no smoking allowed in areas where propane is stored or transferred.

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